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Poetry.

THE TWO SHADOWS.

BY OLIVER WENDELL HOLMES.

It was an evening calm and fair
As ever drank the dew of June ;
The living earth, the breathless air,
Slept by the shining moon.

There was a rudely woven seat,
That lay beneath a garden wall—
I heard two voices low and sweet—
I saw two shadows fall.

Two shadows—side by side they were—
With but a line of light between ;
If shapes more real lingered there,
Those shapes were all unseen.

The voice which seemed of deepest tone
Breathed something which I scarcely [heard,
And there was silence, save alone
One faintly whispered word

I heard a sound that lovers know—
A sound from lips that do not speak ;
But oh ! it leaves a deeper glow
Than words upon the cheek.

Dear maiden, hast thou ever known
That sound which sets the soul on fire ?
And is it not the sweetest tone
Wrung from earth's shattered lyre ?

Alas ! upon my boyish brow,
Fair lips have often more than smiled ;
But there are none to press it now—
I am no more a child.

Long, long the blendid shadows lay
As they were in a viewless fold ;
And will they never break away,
So loving, yet so cold ?

They say that spirits walk the vale,
But that I truly do not know—
I wonder, when I told the tale,
Why Fanny crimsoned so ?

The Green Wood.

BY GEORGE HALLAND.

I love the green wood, O chide me not
For loving the wood, 'tis a beautiful spot ;
God, when he made it, pronounced it good,
And 'tis just as he left it, the same green wood.

I love to wander for hours and hours,
And pluck from its bosom the sweet wild flow-
O set me down in some shady nook, [ers ;
And teach me a lesson from nature's book.

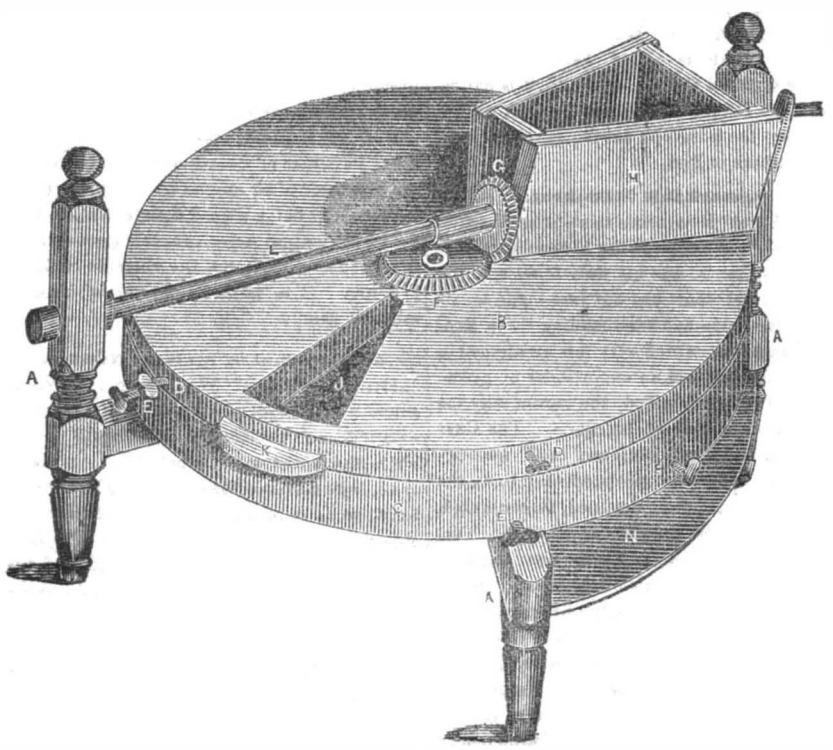
I love the song of the merry bird,
I love the low of the distant herd,
And ever the hum of the busy bee
Has an inexpressible charm for me.

I love that old forest-tree standing there,
With its arms extended in ceaseless prayer,
And the trim brook as it dances along,
Praising God in an endless song.

Commune with nature but one short hour,
All the baser passions lose their power ;
The mind becomes calm, serene and clear,
And is in harmony,—God is here.

Here I would come when sad or gay,
Here I would come to praise and pray,
Here I would live, and here I would die,
And when I am dead, O here let me lie.

MEAT CUTTING APPARATUS.---Figure 1.



This is an excellent Meat Cutting Machine, invented by Mr. John G. Perry, Mumford's Mills, Kingston, R. I, who has made application for a patent therefor. It is constructed in a very different manner from all other machines which have heretofore been used for the same purpose, inasmuch as all the others were constructed upon the chopping principle, while this one is made to operate upon the principle of a grinding mill, but its action on the meat is to cut it. It has, therefore, superior advantages.

FIG. 2.

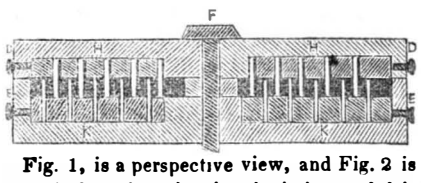


Fig. 1, is a perspective view, and Fig. 2 is a vertical section, showing the knives and driving studs. The machine consists of a round box, having its bottom piece like the nether mill stone, stationary, and its top like the upper stone, moveable—revolving. On the face inside of its bottom, are sets of sharp crescent edged knives, K K, set out at certain distances apart, in the circle. On the under side of the top are setts of studs, or square metal cogs, represented by H H, fig. 2. The studs are set in such a manner as to pass between the knives, K, as seen in fig. 2, carrying the meat and pressing it against the knives. The studs and knives are small and set at a short space apart, so as to mince the meat very fine. The studs and the knives are set into the top and the bed of the box, by having a space cut out for their reception, and blocks placed between each set, by the set screws, D E, as seen in fig. 2. Figure 1 will give a correct idea of the form of the apparatus, how it is fed and how it is operated. A A are the posts, B is the top revolving block, and C is the stationary circular knife bed plate, E and D are the set screws that secure and retain the knives and carrying studs ; H is a hopper to feed in the meat to the knives. It is stationary and secured to the two high posts; L is a shaft secured in bearings in the post and the hopper ; G is a bevel pinion on the shaft, and F another, firmly secured on the top, B. By driving the shaft, L, motion is given to the setts of studs, H, in figure 2, which are secured in the top block, B. T is an opening for a slide, K, to allow the person who attends the machine to get into the interior. There is an opening in the bed plate, into which the minced meat falls, and is received on the board, M. The principle on which this machine operates, will at once be observed to be different from common meat chopping machines. It operates well and gives great satisfaction.

Prussic Acid.

A German paper says that suspension of life caused by prussic acid,, is only apparent; life is immediately restored by pouring *acetate of potash* and common salt dissolved in water on the head and spine. In this country rabbits have been at once recovered from the effects of prussic acid by this means.

Substitute for Tea.

Dr. Graham, an old and experienced physician in London, says—" I may state on very respectable authority, that the first leaves of whortleberry properly gathered and dried in the shade, cannot be distiuguished from real China teas."

Greeting.

Dr. Chalmers was asked by Wilkie whether Principal Baird would preach before the King. Principal Baird had a sad habit of crying in the pulpit. " Why (says Chalmers) if he does, it will be George Baird to George Rex, *greeting* !"

Old Times.

Umbrellas were introduced by British officers into this country about the time of the revolutionary war. Parasols were then unknown. As a defence from rain, men then wore " rain coats," and women " camblets." Gloves were introduced about the year 1755. There were very few carpets before the revolution on the floors; when first introduced, they covered the floor outside of the chairs around the rooms.

Chinese Mode of Administering Oaths.

The witness is made to kneel, and to break a saucer on a bar in front of him. The following oath is then administered : " You shall tell the truth, and the whole truth ; the saucer is cracked; if you do not tell the truth your soul will be cracked like the saucer.

There are in Canterbury fifteen parish churches and only one clergyman to whom a settled income of £300 a year is secured.

RAILROAD NEWS.

Riots on Rail Roads.

There is scarcely a week passes over our heads without a riot on some rail road. The scenes enacted upon our new rail roads exhibits ould Ireland in miniature ; Doneybrook Fair and the Curragh of Kildare, are transferred to the banks of the Hudson, or the banks of the Mohawk In Ireland, the fights are generally between Ribbonmen and Orangemen, on account of religion ; but that is not the inherent cause for softening the crowns of one another in a shillelah melee No, the cause is inherent in Patrick's nature, and he is just the same man in America as he is in Ireland, until he is *civilized* by incorporating himself with the Anglo-Saxon. The feuds between the Corkonians and the Connaught men on our rail roads, are not religious feuds, they are *love-of-fighting-feuds*. Something should be done to prevent such disgraceful scenes in our country. Two weeks ago a great riot took place on the Hudson River Rail Road, near Poughkeepsie, on a Sunday evening, in which one man was shot and a number of others wounded. As a general thing, the Irish laborers get drunk before they fight, and when this is known, every contractor should make Temperance Pledges one test of employing men, as a guarantee of quietness.

Cattle on Railroads.

It has been decided in a New Jersey Court that if a cow strays at large upon a railroad track, her owner is responsible for consequences. The rule was made in a case where it was shown that all proper precautions were made on the part of the rail road.

Hudson River Railroad.

The first locomotive for this road has arrived, and there are now at the depot, 30th st., five passenger cars and one locomotive, beside six or eight second-class passenger cars, which have come down from Springfield on the Hartford and New Haven and New York and New Haven Railways, and for the most part now lie on the track of the Harlem Railroad at Twenty-fifth street. This locomotive was built by the Springfield Car and Engine Company.

Fires in the Woods.

The Malone (N. Y.) Gazette gives the particulars of an extensive devastation in the counties of St. Lawrence, Clinton and Franklin, by fires in the woods, which have raged for some days Farm houses, barns, crops and timber have been destroyed to a large amount. The fire is still at work and more serious results are anticipated under the present dry and parched condition of the earth, if the fires are not suppressed soon by copious rains.

Starvation in Ireland.

An article in Blackwood's Magazine says that at least 15,000 persons perished by famine in Ireland, in 1848, in consequence of the loss of the potato crop, notwithstanding the British Government expended fifty millions of dollars in purchasing food for the population, and extensive donations were received from abroad.

Sudden Death.

Mr. Lucas Cowles, says the Springfield Republican, (Mass.), a highly respected citizen of Westfield, died quite suddenly on Tuesday, under the following circumstances:—He accidentally, while at work, cut his thumb with a buzz or circular saw, and went home and had the wound dressed, and returned to his shop. He soon began to feel seriously ill, and returning to his dwelling, died in a short time. The wound did not bleed, and this probably had a connection with the cause of his death. Mr. Cowles had been previously in the enjoyment of full health.

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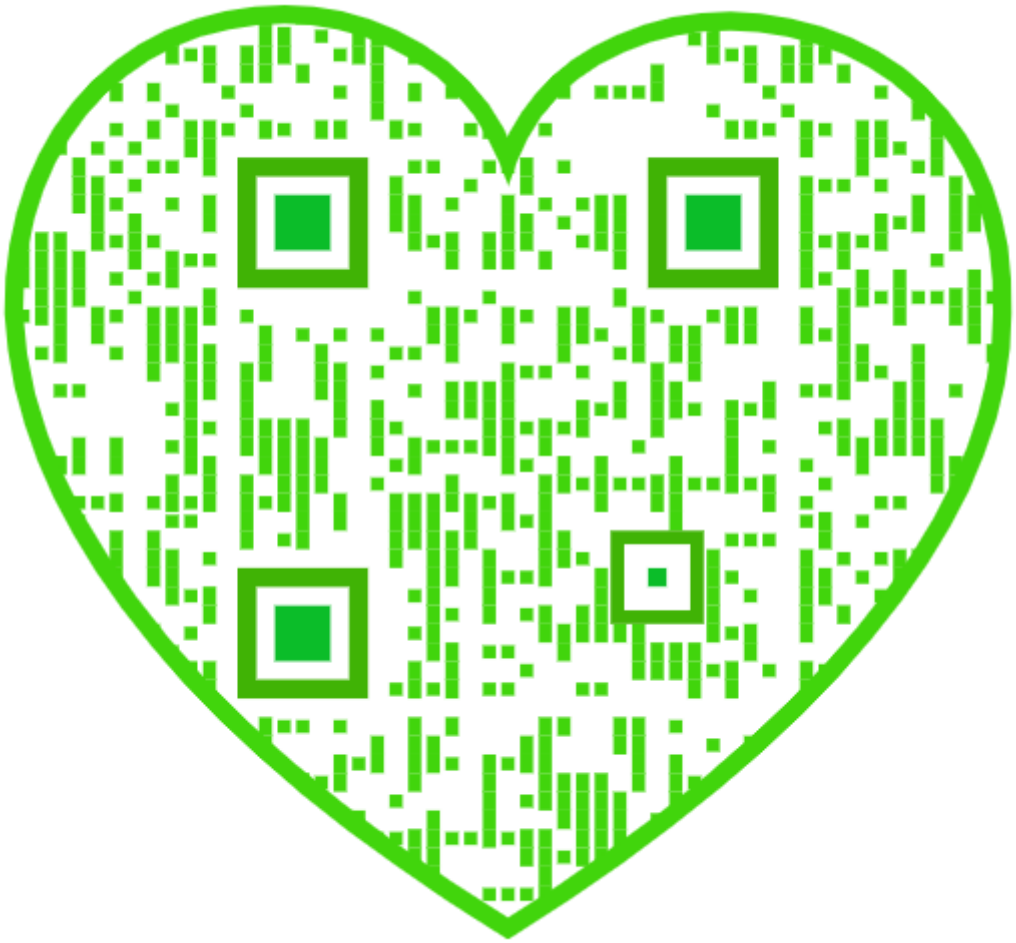

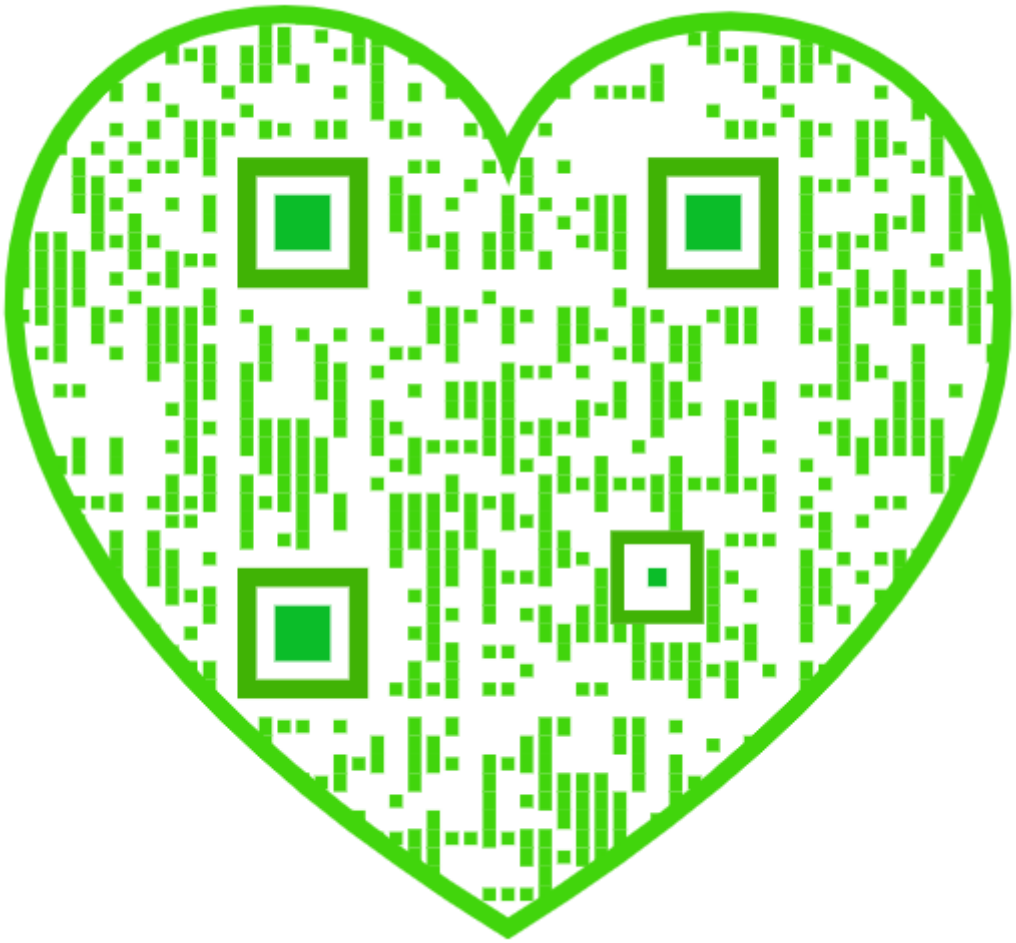

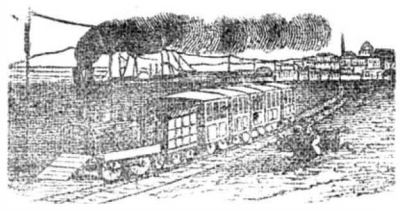

Faber's Water Guage.

We have examined this guage, at the office of J. P. Pirsson, Esq., whose advertisement appears in our columns, and do not hesitate in pronouncing it valuable for the purpose. It is simple and effectual, and can always be relied upon. The float is a sphere in its form, and must resist the pressure in the boiler, tending to a collapse. The float is agitated by the ebulition of the water, consequently conveys motion to the index needle, which, if carefully watched by the engineer, will effectually prevent an explosion.

Russian Army in Hungary.

The Washington Republic says—"We have private letters from Warsaw to the middle of the past month, which give a more distinct idea of the character of the war waged by the Austrian and Russian Emperors on Hungary than any account which has yet reached us. One fact is stated in these letters which we do not remember to have seen published before. It is said a terrible scourge has seized on the Russian soldiers, known as the 'lice pest.' The individual is attacked by vermin under the skin, which increase until the whole body becomes one mass of corruption. Hitherto no remedy has been discovered, and the person attacked is considered as doomed; and the letters say hundreds have, at their own solicitation, been thrown into the river to terminate their sufferings. The cholera also makes terrible havoc on the ill-fed allied army."

Interesting to Mariners.

The following notice from the Superintendent of the Coast Survey is published for the benefit of navigators :

COAST SURVEY STATION, near North Dearfield, N. H., July 31, 1849.

Sir :—I have received from the hydographer of the British admiralty, notice of a rock off the coast of Patagonia, not laid down upon the charts. The Sirius struck upon this rock on the 10th of March, 1849, and reports it to be in "about latitude 48 deg. 27m. S., and longitude 65 deg. 37m. W., nine miles off Spring Bay." I recommend that publicity be given to this account for the benefit of our navigators. Very respectfully yours,

A. D. BACHE, Super't U. S. Coast Survey.
Hon. W. M. Meredith, Sec'y of Treasury.

Patent Office Building.

A portion of the massive and well-constructed foundation of the right wing of this building having been finished, the contractors, Messrs. Provest and Winter, commenced the setting of marble on last Monday week. Energy and activity seem to be infused into all portions of the work, which is progressing with surprising rapidity. The stone-masonry thus far is of a character to elicit commendations from every mechanic, as being fully equal, if not superior, to any work of the kind ever executed in this city.

Old Wines.

The passion for old wine has been sometimes carried to a very ridiculous excess; for the "thick crust," the "bee's wing," and several other criteriors of the epicure, are but so many proofs of the decomposition and departure of some of the best qualities of the wine. Had the man that first filled the celebrated Heidelburg tun, been placed as sentinel, to see that no other wine was put into it, he would have found it much better at twenty-five or thirty years old, than at one hundred, or one hundred and fifty, had he lived so long, and been permitted now and then to taste it At Bremen, there is a wine cellar, called the Store, where five hogsheads of Rhenish wine have been preserved since the year 1625. These five hogsheads cost 1200 francs. Had this been put out to compound interest, each hogshead would now be worth a thousand millions of money, a bottle of this precious wine would cost 21,799,480 francs; and a single wine glass 2,723,808.

Telegraphic Accuracy.

The telegraph operators, or those who send them communications, make terrible work of names, so that half the foreign news is unintelligible. In the dispatch containing the news from Hungary, we see in the New York papers the island Shutt, at the junction of the Danube and the Raab, is called the island of Hutt; in the Philadelphia papers the island of Hulk; in the Baltimore papers the island of Hubl. The Austrian General Ramberg is called Reinberg, a d sometimes Ramberg.

A town which Bem entered in triumph is called Szomber in the New York dispatch, Zomber in the Philadelphia dispatch, and Zomba in Baltimore. Waitzen is called Wartzen and Pesth is called Perth. General Grabbe is called Gabbe, and Schlick is called Sheek and Schleek. Yet for all this, we believe that the telegraph speaks as correctly as some authors in Mss.

Remarkable Statement.

At the great Hungarian meeting in London, Mr. Robertson Editor of the Westminister Review, said that it was his duty to state to the meeting a fact that had but just come to his knowledge. He had been reading three Russian documents, which very few gentlemen in the meeting had had an opportunity of perusing; and they explained the reason why the Russians were now in Hungary. The Czar Peter had left a will addressed to all his successors, in which he declared that they, the Russian people, were destined, foreordained, by Heaven, to the conquest of Europe. That was one document. There was another, which was less of an historical fact. It was a memoir of the policy adopted by the Russian Cabinet, a copy of which fell into the hands of Count Tekeli, in 1848; the idea of the Czar Peter was the idea of the Czar Nicholas.—And it was in furtherance of that idea that he had issued his memorable proclamation before advancing into Europe. He appealed in that to the God of battles. He declared that Russia would fulfill her mission. And he began with Hungary.

A Trading Princess.

The Journal au Havre, of July 17, says:—"For some days every one has been able to perceive in the roadstead in front of the bathing establishment of Frascati, a large steamer. This vessel, named the William, belongs to the Princess of Orange, who is at present at Dieppe, for the benefit of bathing. Thence she is about, it is said, to proceed to Palestine. This Princess is an intrepid tourist, and proceeds where she pleases in her yacht. Independently of this steamer, the Princess possesses, we are informed, eleven steamers which trade for her with England, Russia and the Netherlands. Her revenue is estimated at three millions of francs."

Cincinnati Observatory.

The Cincinnati Gazette announces the reception at the Observatory which does so much honor to that city, of a sidereal clock of the most approved construction, which was selected in London by Mr. Airy, the Astronomer of the Greenwich Observatory, and has been tested at that Observatory. It is the donation of Wilson McGrew, Esq. of Cincinnati.

A Noble and Daring Act.

One of the steam-boats recently burnt at St. Louis, had aboard thirty kegs of powder when the fire broke out Mr Lewis Brown, one of the pilots, was aware of this fact, and at great personal hazard went down into the hold of the vessel, and threw twenty-nine of the thirty kegs into the river. He had barely time to escape when the fire communicated to the hold, and in a few moments the remaining keg exploded, stunning several firemen in the neighborhood.

Two Monsters Captured.

Last week, an attempt was made to throw the 9 o'clock train of Dedham, Mass., cars off the track, near the toll-gate station, by placing a couple of telegraph poles across the track. The gate-keeper noticed two men place the poles, procured assistance removed the poles before the cars reached the spot, gave chase to the villains and captured them.

An injunction against the building of the Wheeling Bridge, Va., has been applied for, in the United States Circuit Court (Judge Grier) Philadelphia. This is a very interesting case.

How to get rid of Bad Smells Infection.

A scientific gentleman states, through the Boston Journal, that for a disentecting agent for general use, for the surfaces whence noisome exhalations arise can be reached, one pound of common copperas, dissolved in one gallon of water, forms a fluid which, when sprinkled on decomposing matter, or any changing surfaces, immediately destroys putrescent exhalations. In extreme cases, two pounds of copperas, in one gallon of water may be used, and in some situations, the addition of so much ground, plaster as will form a thin paste, will be required. The weekly sprinkling of cellar floors, paved yards, drains, and all filthy receptacles, with this fluid, will render the atmosphere above them perfectly salubrious. In sick rooms and confined spaces, the colorless liquid should be placed in shallow vessels, freely exposed, when its power of absorption will soon change the character of air around it. [We described copperas, as being a good disintectant, in volume 3, Scientific American, it is good—there is no doubt about it, but the chloride of Zinc is better. It is made by dissolving zinc in muriatic acid.

A Descendant of Sir Isaac Newton.

Mrs. Newton, of Woolsthorpe, Lincolnshire, who is descended from the great mathematician and astronomer, and dwells in his birth-place, was lately visited by a mulatto sybil, who believed the children of Mrs. Newton to be heirs of a large estate, and could enable them to recover their heritage. The lady therefore retained the swart Egyptian, and entrusted her with two silk gowns, two petticoats, two garments still further removed from observation, two silk handkerchiefs, a shawl, and her wedding ring, to enable her successfully to "work the planets." The planets, however, were unaffected by the enterprise, save that Venus almost lost her "gravity," when, for such an object, she saw a descendant of Newton denuding herself of her chemise!

Poisons and Antidotes.

If by accident any person should drink nitric, muriatic, or sulphuric acid, some alkaline substance should be administered as soon as possible. Ammonia and calcined magnesia are good. For oxalic acid, chalk is a good antidote; for corrosive sublimate, the white of eggs; for an over dose of tartar emetic, a strong decoction of hyson tea, or oak bark is good, or the leaves of the black berry.

Heights of Localities in the Holy Land.

The summit of Horeb, 7,097 Parisian feet above the sea, Jericho, 717 below the sea; bathing places of the pilgrims in Jordan 1,291 below the sea; summit of Tabor, 1,755 above the sea; surface of the lake of Tiberias, 625 below the sea; the highest point of Lebanon, 8,800 feet above the sea; the cedars of Lebanon' about Eden, 6,000.

A Droll Comparison.

A learned and ingenious foreigner, having visited England, and being asked how he liked the English, said; "They resemble a butt of their own favorite beverage, ale—frothy at top, dregs at the bottom, but the middle part excellent."

Cholera at Sandusky.

The cholera at Sandushy City Ohio, has been very severe, almost all the inhabitants deserted it, and the living were not able to attend to the sick, some physicians from Cleveland and other places, have performed the offices of good Samaritans.

Coming it Strong.

There are 8,300 poor house officers in England, whose salaries are more than £500,000 per annum.

Insectual Leaping.

The flea, grasshopper, and locust, jump 200 times their own length, equal to a quarter of a mile for a man.

The Five Points.

The five cardinal points for a drunkard are a face of brass, nerves of steel, lungs of leather, heart of stone, and incombustible liver.

Effects of Sugar Diet.

In seventeen experiments on dogs it is ascertained that in some cases, sugar tends to fatten the animal, and in others it turns to bile.

Abd el Kader.

This gallant Moorish chieftain is still kept in durance by the French Government. The violation of promise committed by the former dynasty is continued by the present one, and in answer to his petitions for release, he has been answered, that the Government is afraid he will not keep his word. It must, therefore, by this peculiar fear, continue to violate its own.

"A Tinner" enquires through the National Intelligencer, whether any body has ever known or heard of a house covered with tin being injured or struck by lightning.

The Washington Globe says that it was not the celebrated aeronaut, Mr. Green, that was drowned in Wales, but another Mr. Green.

A fellow at Newark, N. J., attempted to rob a Mr. Wright, but although the rascal was armed with pistol and dagger, Mr. Wright succeeded in capturing him and brought him a prisoner to the jail. Well done Wright—he did the right thing.

Valuable mines of lead silver ore have been discovered at Little Rock, Arkansas. The vein is 15 feet in thickness and has furnished 500 ounces of silver to the ton of ore.

The Artesian Well at Charleston, S. C., which has been bored to 800 feet in depth, has resulted in disappointment, and the work in all likelihood will be abandoned. We are sorry for this.

The Supreme Court of Alabama has decided that sight drafts and bills are entitled to days of grace, just as any other draft or negotiable paper.

Every pound weight of cochineal contains 70,000 insects steamed to death; so that the annual sacrifice of insectual life, to procure our scarlet and crimson dyes, amounts to about 40,000,000 of these small members of the creation.

An emminent meteorological observer in Manchester England, says, that the air was fully charged with electricity around places where the cholera greatly prevailed, and with the greatest intensity in England since its reappearance there, last June.

A tornada at Cincinnati,, on the 8th instant, threw down the steeple of St. Philemon's Church, a structure 250 feet high, which was not entirely finished. It fell along the street, and did no damage to other property.

It is stated that three clergymen in succession who were appointed chaplains to the Liverpool Cemetery, England, have become mentally deranged. The circumstance is attributed to their repetition (sometimes as often as six times a day) of the funeral service, and the impressiveness of the sad spectacle of which they were habitually spectators.

A letter has been received at Snow Hill, Md., calling for the heirs of John Watkins, Moses Chaille, Solomon Long, and Eli Dorsey, Md., Cont. Line, Army of Revolution, who are entitled to commutation and county land. It is from Gen. John P. Duval, at Talahassee, Florida. Some of the heirs are said to be in Washington.

A person who undertakes to raise himself by scandalizing others, might just as well sit down on a wheelbarrow and undertake to wheel himself

A singular recovery from partial derangement is mentioned by the Easton Whig, in the case of a man at Nazareth, Pa., whose mind had been deranged for eight years, during which time he had not spoken a word till last week, when his reason suddenly returned, and he attends to business as usual, though he is entirely unconscious of the events which occurred during his mental aberration

The Iceland cod fishery this year has been very successful. A smack lately arrived in the Thames with 19,000 cod on board, and reported that one of the French smacks on the coast of Iceland had taken as many as 50,000 head.

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Franklin Institute.--Circular Address of the Committee of Exhibition.

The Franklin Institute has always felt that, in order to give these Exhibitions the desired utility, it was necessary to make them general, and to bring together, as far as possible, the products of all sections of the Union. Every inducement will therefore be offered, and every facility afforded to the mechanics and manufacturers of all parts of the country, to take advantage of this Exhibition for the purpose of making their goods generally known; and goods forwarded to the Institute will be carefully preserved while under their charge, and will be so placed as to command a fair share of the attention of the numerous visitors.

The vast extent and convenient arrangement of the rooms in which the Exhibitions are held, present almost unparalleled advantages in the display of the goods, and every effort will be made to improve the opportunities which are thus offered.

The regulations will be substantially the same as those by which our former Exhibitions have been governed. The rule requiring that goods intended to be submitted to the examination of the judges, and to compete for a premium, shall not be deposited later than on the day previous to the opening, has been found productive of such convenience to the depositors and to the managers, that it will be hereafter continued.

The Institute has purchased a steam engine of sufficient power to drive all the working models of machinery which may be presented; and no disappointment will in future result from heretofore necessary dependence upon engines of faulty construction or insufficient power.

Premiums will be awarded for articles of peculiar merit and excellence, under the regulations hereunto submitted.

Believing, therefore, that this Exhibition will afford you a valuable means of submitting to public inspection such articles as you may be desirous of having more generally known and appreciated, we respectfully invite you to contribute, either personally or through your agents, such products of your skill. Their novelty, excellence, or utility, their style of workmanship, and their adaptation to the purposes intended, will thus be made known to dealers, and to the community in general, to the mutual benefit of both producer and consumer.

Regulations.—1. The Exhibition Rooms will be prepared for the reception of goods, on Friday, the 12th of October, and opened for the admission of visitors on Tuesday, the 16th, at 10 o'clock, A.M, and the Exhibition will close on Saturday, the 27th, at 10 o'clock, P. M.

2. No goods deposited after Monday evening, October 15th, can be entered on the Judges' lists for competition or premium.

3. To insure a perfect impartiality, the managers of the Institute, the Committee of Exhibition, and all firms or partnerships in which a manager or a member of the Committee on Exhibitions, is interested, shall be excluded from competition; and the Judges shall be exclusively selected from persons practically acquainted with the several branches of manufactures on which they shall be appointed, but who are neither depositors of such manufactures themselves, nor in any way interested in the articles submitted to their examination.

4. Awards will not be confined to specimens prepared expressly for exhibition, but regard will be had to the prices and quality of the articles, compared with the same description of foreign goods, and with the specimens presented at former exhibitions, and no premium shall be awarded for an article that has received one at any former exhibition of the Institute.

5. Three grades of premiums will be awarded; styled a first, a second, and a third premium. When an article shall be judged worthy of a first premium, in case the maker has received a first premium for a similar article at a former exhibition, a certificate may be awarded referring to the former award, and stating that the present is equal or superior in quality, unless the improvement over the first award may be judged worthy of another first premium.

6. Proof of origin must be furnished, if required, for every specimen offered for exhibition.

7. All articles deposited must be accompanied by an invoice, stating the name and residence of the depositor; and it is particularly requested that the labels may be attached, bearing the name of the maker—in default of which, articles have sometimes failed to receive any award by the Judges. It is also desirable that the names of the articles should be marked upon them, and that those intended for sale should be marked with their prices, and the places where they can be obtained.

8. The Committee will use all diligence in preserving the goods from being lost or injured, by employing suitable persons to assist them in superintending the rooms, and also faithful and competent watchmen during the night; but all articles will be at the risk of the depositors, who are requested to place all small and valuable articles in proper show cases for their protection.

9. Arrangements will be made to exhibit to advantage any working models or machinery that may be sent in for exhibition, and contributions in this branch are respectfully invited. Experience has shown the interest which the public take in them, and the display is calculated to convey useful information. A careful and competent superintendent of machinery will be provided.

10. The mornings of each day, until fifteen minutes before ten o'clock, shall be appropriated to the Judges.

11. Neither owners nor depositors of goods will be admitted to the exhibition room during the time appropriated to the Judges, except at the special request of the Judges of the articles owned or deposited by them.

The above three grades of premiums are: 1st, a silver medal; 2d, a Bronze medal; 3d, a certificate. In addition to which, the Institute will award a gold medal, on the recommendation of the Committee, for such new branches of manufactures as may be deemed worthy of it by the Institute in general meeting.

Industrial Heroes.

BY THOMAS CARLYLE.

Richard Arkwright, it would seem, was not a beautiful man; no romance hero with haughty eyes, Apollo lip, and gesture like the herald Mercury; a plain, almost gross, bag-cheeked, pot-bellied Lancashire man, with an air of painful reflection, yet also of copious free digestion;—a man stationed by the community to shave certain dusty beards, in the Northern parts of England, at a half-penny each. To such end, we say, by forethought, oversight, accident, and arrangement, had Richard Arkwright been, by the community of England and his own consent, set apart. Nevertheless, in strapping of razors, in lathering dusty beards, and the contradictions and confusions attendant thereon, the man had notions in that rough head of his; spindles, shuttles, wheels and contrivances plying ideally with the same; rather hopeless looking; which, however, he did at last bring to bear. Not without difficulty. His townsfolk rose in mobs round him, for threatening to shorten labor, to shorten wages; so that he had to fly with broken washpots, scattered household, and seek refuge elsewhere. Nay, his wife too, as I learn, rebelled; burnt his wooden model of his spinning wheel; resolute that he should stick to his razors rather; for which, however, he decisively, as thou wilt rejoice to understand, packed her out of doors. O reader, what a Historical Phenomenon is that bag bellied, much enduring, much inventing man and barber? French Revolutions were a brewing; to resist the same in any measure, imperial Kaisers were impotent without the cotton and cloth of England; and it was this man that had to give England the power of cotton.

Neither had Watt, of the Steam Engine, a heroic origin, any kindred with the princes of this world. The princes of this world were shooting their partridges; noisily in Parliament, or elsewhere, solving the question—Head or Tail? While this man, with blackened fingers, with grim brow, was searching out, in his workshop, the Fire-secret; or, having found it, was painfully wending to and fro, in quest of a "monied man," as indispensable man-midwife of the same. Reader, thou shalt admire what is admirable, not what is dressed in admirable. Thou shalt learn to know the British lion, even when he is not throne-supporter, and also the British jackass in lion's skin, even when he is. Ah, couldst thou always, what a world were it! But has the Berlin Royal Academy or any English Useful knowledge Society, discovered, for instance, who was it that first scratched earth with a stick, and threw *corns*, the biggest he could find, seed grains of certain grass, which he named *white* or *wheat*? Again, what is the whole Tees-water and other breeding world to him who stole from the forests the first bison-calf, and bred it up to be a tame bison, a milk cow? No machine of all they showed me in Birmingham can be put in comparison for ingenuity with that figure of the wedge named *knife*, of the wedge named *saw*, of the lever named *hammer*: nay is it not with the hammer-knife, named *sword*, that men fight, and maintain any semblance of constituted authority that yet survives among us. The steam engine I call fire-demon and great; but it is nothing to the invention of *fire*. Prometheus, Tubal-cain, Triptolemus! Are not our greatest men as good as lost? The men that walk daily among us, clothing us, warming us, feeding us, walk shrouded in darkness mere mythic men.

It is said, ideas produce revolutions: and truly they do; not spiritual ideas only, but even mechanical. In this clanging, clashing universal Sword Dance which the European world dances for the last half century, Voltaire is but one choragus, where Richard Arkwright is another. Let it dance itself out. When Arkwright shall have become mythic, like Arachne, we shall spin in peaceable profit by him; and the sword dance with all its sorrowful shufflings, Waterloo waltzes, Moscow gallopades, how forgotten will that be!

Interesting Agricultural Experiments.

Some recent experiments in wheat and flour go to prove that both contain water, and that the quantity is more in cold countries than in warm. In Alsace, from sixteen to twenty per cent.; in England, from fourteen to seventeen per cent.; in the United States from twelve to fourteen per cent.; in Africa and Sicily from nine to eleven per cent. This accounts for the fact that the same weight of Southern flour yields more bread than the Northern. English wheat yields thirteen lbs more to the quarter than the Scotch. Alabama flour, it is said, yields twenty per cent. more than Cincinnati; and, in general, American flour, according to the authority of one of the most extensive London bakers, absorbs eight or ten per cent. more of its own weight of water in being made into bread than the English. The warmer the country the more is the water dried out of the grain before it ripens, and hence, when made into bread, it absorbs more water again, and is therefore more valuable. Professor Black has written a report for the Patent Office, in which he shows that the presence of water unfits these articles for preservation. The books of a single inspector in New York city showed that in 1847 he inspected 218,679 barrels of sour and musty flour. In his opinion the loss on these was $250,000. Every year the total loss in the United States from moisture in wheat and flour is estimated at from $3,000,000 to $5,000,000. To remedy this great evil the grain should be well ripened before harvesting, and well dried before being stored in a good granary. Kiln drying is preferable. The mode of ascertaining the amount of water is this:—Take a small sample, say five ounces, and weigh it carefully. Put it in a dry vessel, which should be heated by boiling water. After six or seven hours, weigh it carefully, until it loses no more weight. Its loss of weight shows the original amount of water. All corn shipped to foreign countries should be well kiln dried. The great prejudice hitherto against Indian corn meal, among the working classes of Britain, was owing to its musty taste—almost every particle having been soured on the voyage. Kiln drying prevents this evil. A market for Indian corn may always be open in England, where it can be used for fattening cattle, and where we can sell it always at a profit, if it be kiln dried.

Land and Water.

The area of dry land to that of the sea is about 100 to 270, a little more than one-third. A twenty third part of the land consists of islands. There is more ocean in the southern than northern hemispheres. The superficial extent of land is three times greater at the north than the south. It is not known whether the poles are surrounded with land or an ice-sea. The North Pole has been approached within 7 degrees and the South within 11. All the great continental masses terminate pyramidically on the South. The Atlantic Ocean seems to have been an immense valley scooped out by floods that directed their force first to the north-east, then to the north-west, and then to the north-east once more. This view is supported by the parallelism of the opposite coasts of the hemispheres, where we see indentations standing over against projections. The present shape of the land is the product of two causes that were exerted successively; firstly, subterranean force, the measure and direction of which we have no means of discovering: secondly, powers that are at work on the surface. The elevation of continents has been an actual not an apparent one only, and is going on over vast areas at this moment. The coasts of Sweden and Finland are rising, it is said, at the rate of four feet in a century. On the south the upheaving power abates until, as some observers affirm, the land sinks. Lines of old sea levels are indicated along the coasts of Norway, by shells deposited by the present ocean, which lie six hundred feet above the present sea level There are some spots on the face of the globe, in the interiors of continents which actually lie lower than the present uniform level of the ocean. If the whole waters of the ocean were to be drawn in from the hollows which they now cover, we should see that the irregularities in the surface of the earth doubled in extent, and the heights to which the mountains rise, would be visibly contrasted with the depths filled with liquid. Man would then perceive with some surprise that the tolerably level countries in which he has pitched his dwelling are in fact shelves half-way up elevations, the highest of which attain to between fifty and sixty thousand feet. In some parts of the ocean, no bottom has been touched with a line of 25,300 feet—4 4-5 English miles. The temperature of the sea varies like that of the air in various climes; but a series of careful observations teach us that in the usual state of the sea's surface from the equator to 48° of N. and S. latitude, it is a little warmer than the stratum of air that is upon it. It has also been discovered that there are great currents running underneath from either pole to the equator. The attraction of the sun and moon cause those regular and periodical disturbances of equilibrium which we term tides. In the open ocean the rise is not more than a few feet, but the opposition of coasts cause an elevation of water in some places to between 60 and 70 feet. In addition to under-sea currents there are currents along the surface which exercise a considerable influence on the intercourse of waters, some of them narrow enough to deserve the term of oceanic rivers, since they run through the main mass of water like streams between unmoved banks of land. There is the well-known gulf stream which commences south of the Cape of Good Hope, runs through the Caribbean Sea, the Gulf of Mexico, and the Straits of Bahama, turning eastward by the banks of Newfoundland, crossing the Atlantic, and frequently throwing the seeds of tropical plants on the Irish coast. The Pacific ocean has its great current also, that brings the cold water of high southern latitudes to the coast of Chili, and runs northward for some distance before it turns to the west. Ships in traversing that ocean will suddenly find a difference of 20° in the water when they pass from the adjacent water into this current.

Line of Steamers to New York from Scotland.

Messrs. Todd & McGregor, the engineers and ship-builders, are about to build a large iron steamer of 1600 tons, for the trade between Glasgow and New York. She is to be screw propelled, with engines of 350 horse power.

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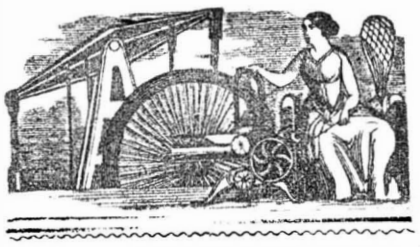


New Inventions.

Process for the Reduction of Sulphate of Lead to the state of Metallic Lead.

In the calico-printing works, a considerable quantity of sulphate of lead is produced in the preparation of acetate of alumina or red liquor, by decomposing acetate of lead by means of alum. This sulphate of lead may be decomposed, and the lead obtained in a metallic state, by reduction by means of zinc or iron. Another plan is recommended, viz.: Mix 100 parts of sulphate of lead with 10 of salt, so as to form a paste rather liquid, then place blocks or sheets of metallic zinc, or what is better, cover these latter with a layer of the saline mixture, about 1½ inches thick The white mass soon becomes converted into a grey substance, which is metallic lead, impregnated with sulphate of zinc and salt. Wash this product and melt it; pigs of pure lead may thus be obtained; or the lead well washed, but not melted, may be employed for the preparation of either acetate of lead or white lead, for either of which purposes it is very fit, on account of the finely-divided and porous state of the metal rendering it susceptible of rapid oxidation. Exposed to the simultaneous action of a little acetate of lead and an atmosphere rich in carbonic acid, it is readily converted into white lead, which covers very well. In the white lead works on the Dutch plan, plates of this porous lead, formed by pressure of the finely divided particles thus produced, may be advantageously substituted for the plates and coils of lead at present employed.

Improvement in Button Manufactures.

In our List of Patents, this week, will be found the name of Peter Kirkham, for improvement in covered buttons, the right of which has been assigned to Hitchcock & Co., button manufacturers in Waterbury, Conn We believe this improvement is a very valuable one. By it buttons can be made at a less price and more handsome than by the old plans. The shank, or eye, and the covering, are all fastened in the interior of the button.

Alarm Whistle for Sea.

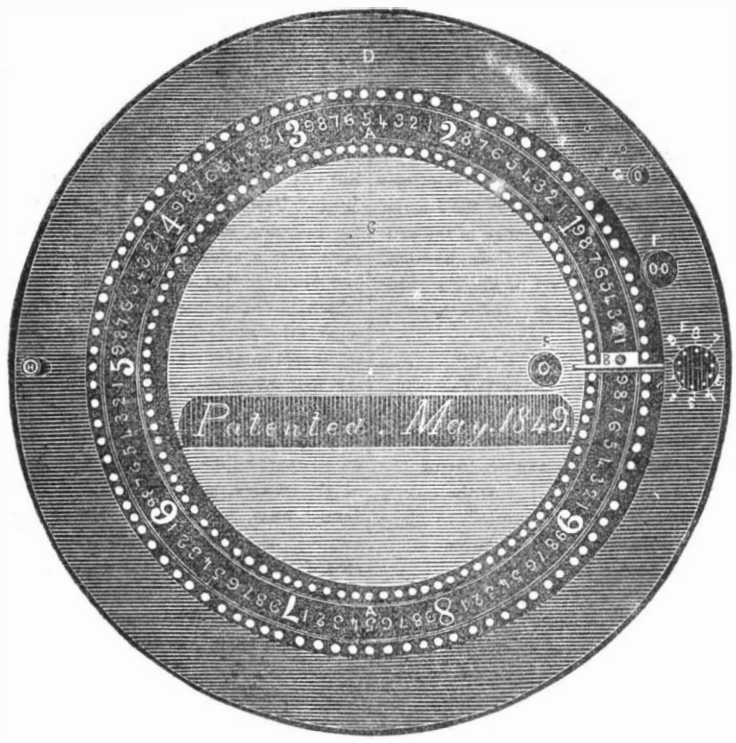
A newly invented apparatus for the prevention of collision at sea during foggy and thick weather, when lights and other methods now in use are altogether unavailable, was exhibited lately at Lloyd's rooms, Royal Exchange, Liverpool. The machine is extremely portable, occupying a case of about two feet square, and capable of being worked by one man, who, turning a cog-wheel acting on a force pump, produces a volume of sound that will penetrate several miles distant, which being continuous, satisfactorily marks the position of a vessel. The machine, which was inspected by numerous merchants, shipowners, captains, and practical nautical men, was highly approved of, and it appeared to be the prevailing opinion that all vessels proceeding to sea should be furnished with one, not only to prevent collisions, but also to be used when off a lee shore, or in distress.

[The above is from the Liverpool Times. It has been got up after the sad affair of the Europa and —— Bartlett. But the invention is not new by any means. It is well known both here and in England.

New Invention for Paper Makers.

An important invention for producing water-marks on all kinds of paper, and particularly adapted for bank-notes and paper requiring security from forgeries, has been patented by the inventors, Messrs. W. Brewer and T Smith, of England. The invention produces an unlimited series of any given design in water-mark with precise similarity, which cannot be produced by the method now employed, in which wires are used.

NEW CALCULATING MACHINE.---Figure 1.



This is a neat and unique calculating machine, invented by Mr. William M. Haines of Rochester, N. Y, and patented in the month of May last. It consists of a neat wooden frame with a central moveable disc, and an outer moveable ring, in which are openings which display the sum or result of the calcu-calculation. It is therefore a calculating machine which exhibits the results of certain operations, and on that account the operator is not liable to make any mistake, a fault which belongs to all other calculating instruments.

Figure 1, is a face view of the apparatus, and figure 2, is an inside inverted view showing the mode in which the moveable discs and circles are operated.

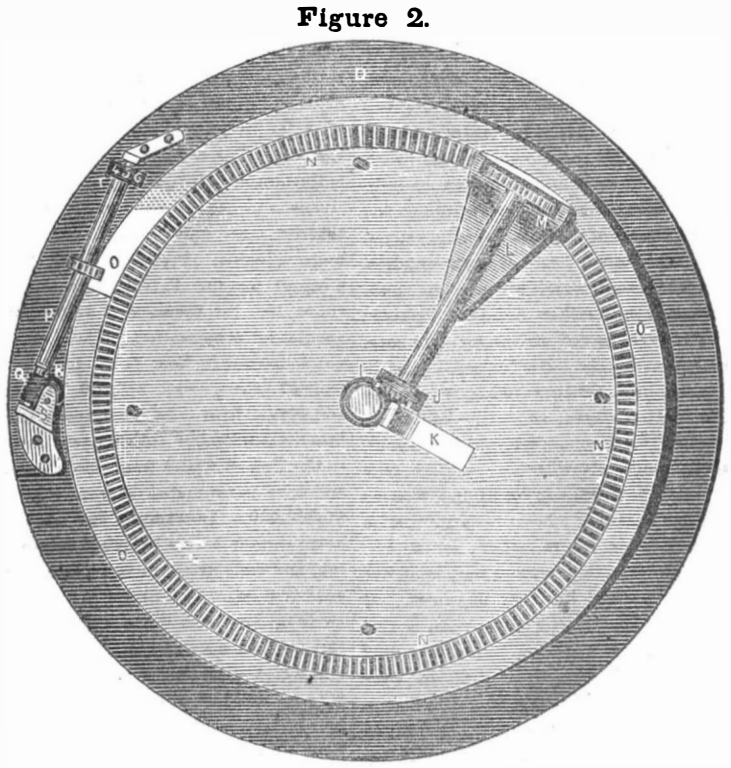
The wooden box in the above engraving, is removed, to show the parts better. Suffice it to say, that a round block of wood is cut out to receive the machinery, (which is very simple,) to allow it to move. And in the first place the circular brass plate Z, fig 2, secured to the wooden block by two screws passing through its bottom. To this brass plate the whole of the machinery is secured

It has three circles or figures on it. One circle is A, fig 1, which is elevated above the others. It has 100 figures on it, in section from 1 to 9, marked by the nine digits, in large figures, which stand for numbers from 10, to 100.

B, is a small piece of steel screwed to it, which is for a definite pointer. The brass plate Z, fig 2, has one under circle of figures on it also. It is seen in the opening F, fig 1, showing the cipher (0.) There is another circle (moveable) under D, showing two ciphers (0, 0) in the opening F

The inner circle under the moveable disc C, has 100 figures on it from 1, to 100; the outer circle under the moveable ring D, has 100 figures on it from 0 0 to 100. In the opening G, fig 1, is seen ten figures from 0 to 9, cut on the periphery of a small roller T, seen in fig 2. There is also a minor circle, on the ring D, seen at the extreme right with figures from 0 to 9, on the ring, but the small moveable plate, inside of the circle, moves, and it has a fixed pointer on it to indicate its number of revolutions.

Figure 2.



Operation—The way to operate the machine is as follows. Bring the inside opening F, till the cipher 0, is seen in it, and the outside in the same way, as it is now represented to be set in fig 1. The small round holes seen in the circles, are to receive the point of a pin to move the disc C, and ring D. Having the machine set as represented, we desire to find out the sum total of 8743
5631

Take the pin and put it into the small round hole on the outer circle D, oppposite 7 in the 9th section of the raised circle A, and turn it round till the pin touches the pointer B, then put the pin in the small hole in the inner circle of the dise C, opposite 3 in the fifth section of the raised circle A, that is the 3rd figure after the large 4; and now turn round the disc like the ring D. If we now look through the opening F 2 and the opening F, in C, we will see 87 in the first and 43 in the second. To this sum we have but to add the next mentioned above. Now then take the pin and put it in the small hole of the ring D, opposite 6, after the large 5, on the raised circle A, and then turn round as before directed, to the pointer B; then do the same with the inner circle, putting the pin in the small hole 1, after the large 3. If we now look through the opening G, on the ring, we will see 1, on the roller under. In the opening F 2 we will see 43, and in the opening F, in the disc C, we will see 74, the sum total of the question viz, 14374. This method of calculation can be carried out to any extent, for addition is the basis of multiplication, while by moving the circles to the left, subtraction is performed, and subtraction is the basis of division.

Figure 2, shows how the roller is moved for the thousands. It is thus. The axle of the disc, with its worm I moves a toothed wheel J, secured on raised bearings K L, and secured to the lower plate. The small axle is therefore moved giving motion to the wheel M, which bites into the teeth of a circular rack N, N, and moves round the ring O, which has the circle of figures on it, seen in figure 1, through F 2. This ring O, has also an inclined piece on it, indicated as moving under the pinion on the axle P, of the small figure roller, therefore, every revolution of the ring D, moves the roller round one figure, and it will be seen, that the axle P, has a worm screw Q, on its extremity at S, to move the plate of the minor circle at the extreme right in figure 1. This is for extended calculations.

For want of room we cannot enter into a more extended description of its principle at present. More information about rights, price and the sale of these simple and desirable instruments may be obtained from the inventor, and at some other time we shall refer to this machine again.

Artificial Quartz.

It is well known that pure silicic acid constitutes one of the most transparent minerals in quartz, the basis of all our glass! Chemists have known for a long time, how to clear silicic acid of any impurities of color, but they have only been able to make an opaque jelly, nothing at all like the quartz. Mr. Ebelman, of France, has discovered the way to make it transparent. He combines the silic acid, with an ether of silic acid and alcohol, and then exposes this to a moist atmosphere, where it gradually contracts and hardens, although not so hard as glass. It combines readily with coloring matters, such as chloride of gold, &c.

Beet Root Sugar.

The Paris Monitor publishes an official report from the Minister of Commerce, relating to a discovery made by a Chemist named Melsens, which if true, will revolutionize the whole system of making sugar, both beet root and cane. It is stated that almost the only labor required, is to get the beet root and cane juice ready, when a certain powder is thrown in among the liquor, and the sugar begins to form into chrystals perfectly clarified, the sugar produced being of the purest white. We are afraid, that this alleged discovery promises too much, but as the French Government has appointed a Commission to make experiments, we will soon know whether it is a real or only a pretended discovery If true, it is the greatest discovery of the present century.

Anecdote.

Forty years ago Fisk and Upham were classmates at Cambridge. At that time it was fashionable for gentlemar to wear their cravats enormously stuffed. Fisk was noted for wearing the largest stuffing of any one in college, and rather careless about its being clean. Fisk called in at Upham's room, one morning and said—"Come, Upham, I'm going over to Boston to-day, will you go along?" "I think," said Upham, "I have no business there to-day By the way, Fisk, do you have your washing done in Boston?" "No," said Fisk; "what put that into your head?" "Why," said Upham, "I see you have a bundle of dirty clothes around your neck, and I thought, perhaps, you might be taking them over to Boston to have them washed!"

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NEW YORK, AUGUST 25, 1849.

Food made of Indian Corn Meal.

Carlyle, in an able article on the uses of Indian Corn Meal, says, "The Valley of the Mississippi is able to raise food enough to supply the whole world." Alluding to the Indian Corn Meal that had been imported by England during the dearth of 1847, he says, that again and again he tried a mess of Indian meal porridge, but it had "a musty taste—it never wanted a disagreeable *tang*. In vain was it washed, in vain was the meal boiled, the musty *tang* was still there." He finally came to the conclusion that all the Americans had said about the sweets of hominy was mere stuff. Last year, however, he got a present of some excellent, well-kept corn from an American friend, which has altered his old views about hominy entirely. He now believes it to be an ambrosial dish, fit for a prince or a poet. We are glad that Uncle John has received a palatable dish for once, from Brother Jonathan. It would be well for the poor of Britain, if this article of food was more generally used by them. If the corn be kiln dried, and the meal well boiled, it is sweeter than the meal made from oats, and contains far more nutriment to its specific gravity. There is a kind of meal made from Indian Corn that is very scarce in this city, and which sells at a too high price, we think It is made of the inside of the berry—the whole hull being separated from it. It is as white as wheat flour and very palatable. The price as retailed is six cents per quart. This is a kind of food which would answer admirably as a substitute for oatmeal, to the inhabitants of Britain, and the northern kingdoms of Europe, who have been accustomed to an oatmeal diet. America might drive a most extensive corn trade with Britain, if the inhabitants of that country fully appreciated the *goodness* of Indian Corn Meal food. We wish to throw all the light we can upon this subject, as we know that Carlyle is correct respecting the capacity of America to supply any quantity of it.

A valuable improvement has recently been made by Mr. Oliver P. Stevens, of Ohio City, in the manufacture of hominy. We have received a sample of it by a gentleman who has come from that place. It is a great article of food, Carlyle would smack his lips after a meal of it, with true alimentive gusto. The Hon. H. L. Ellsworth, ex-Commissioner of Patents has advised Mr. Stevens to take out a patent for the manufacture.

We have a piece of advice to give our dispepsical friends, and those engaged in sedentary occupations, and then we are done. It is this. Take each a soup plateful of hominy and sweet milk for breakfast every morning, and if you chose, "a cup of coffee afterwards." If you follow after this advice, you will soon give evidence of the truth of the old adage, "Laugh and grow fat."

Street Paving.

Road making is really a science. It is (taking it as a whole,) the most important part of civil engineering. Famous in the days of old, were the Romans for their roads, and for common roads their works remain to the present day, as monuments of their skill and power. McAdam has left an abiding name for his skill, and his art of road making. Street paving, however, is apparently a different branch of road making from common highways, but it is not really different. Every city should have well paved streets, not only for cleanliness, but for health. Cities that have well paved streets, always show the best bills of health. The qualities of street pavements are solidity, durability smoothness, and the form to shed off water rapidly. The streets of a number of European cities are paved with whin stones, a basaltic rock. The blocks are not broad, but deep, and are set firmly into sand, pounded down with a peculiar kind of beetle. The streets of New York until within two years, have been paved with cobble stones pounded into sand. This kind of causeway paving, is miserable in the extreme. The cobble stones are exceedingly well adapted to give a person in a stage some idea of the shakes. Each stone may be geometrically described as being something akin to a circle, and yet very different from one. A circle is bounded by a curved line, yet a curved line is not a circle. Well, it is just so with a cobble stone pavement—it is a pavement, and yet it is not a pavement. It is a foot congregation of beetled, uprorious, projecting hard heads, calculated to make considerable noise in the world. Byron must have had such a pavement in his mind's eye, when he penned Waterloo. At present there are two substitute pavements for it, in the course of construction in Broadway. One is Russ' plan, the other is Pinkerton's. The former plan is to form a firm substrata of concrete and cement, and on the top of that build the pavement of rectangular granite blocks, laid down in lozenge formed beds. This is a very expensive mode, but it is laid down with great care.

The other plan is to lay down a sub-pavement of cobble stones, and on the top of that build granite blocks like Russ. Both plans are in some sense old, at least what is new is of no great importance. The great question is, which is the best. The latter plan is the cheapest at first; our opinion is in favor of the cement foundation,—we believe that it will be cheapest in the end, because it must endure longer. It is laid upon a smooth bed, and is not so liable to sag down as if it had been levelled with sand like the other. It is easier, no doubt, to get down to pipes, &c., below the other pavement; but of this we do not speak. As both kinds are laid down in Broadway, an excellent opportunity will be afforded to test the qualities of both, and we therefore request our citizens to bear in mind the opinion expressed in this article.

British War Steamer Termagant and American Propellers.

The Washington "Republic," speaking of this vessel, says:—

"Engineers on this side of the Atlantic had supposed that the bad success of the Great Britain would have convinced their English brethren that the application of cog-wheels to screw steamers, for giving a higher speed to the propeller than the speed of the motive engine, was impracticable. It appears, however, that the system of "gearing" has not been discarded in England; the great engineering house of Seaward & Co., of London, having just fitted the Termagant with immense engines, transmitting their power to the propeller by this very objectionable expedient.

It is a remarkable circumstance that the screw vessels built in this country for freighting purposes succeeded from the start, and that we had some fifty such vessels in operation before screw propulsion had taken a *practical* standing in England. This circumstance may be traced solely to the *direct* application of the engine to the propeller, resorted to by the distinguished engineer who has so successfully introduced screw propulsion in America. It is well known that at first this direct application of the engine to the propeller met with vehement opposition from leading engineers, who ridiculed the idea of driving engines of large power at the rate of *forty* turns per minute. The success of the direct-acting engine of the Princeton and other vessels seems not to have completely removed the original prejudice with the venerable firm of Seaward & Co., who consequently have the mortification of finding, at this late day, that with the enormous power of six hundred and twenty horse, English measure, they can only give a speed of nine knots per hour to a vessel of fifteen hundred tons, when in light trim. But this is not the worst feature in the concern. That "terrible noise kept up by the engines," which the "Artisan", mentions, indicates very plainly that durability cannot be looked for, even should the noise by habit become tolerable to those whose fate it will be to manage the Termagant."

[We believe that nine knots an hour is about the average speed of the best British propellers. This is not so bad. To prevent noise, some of them have the teeth made of hard wood, like the old fashioned wheels of "long, long ago." We think, however, that there is a mistake in the above in reference to the Great Britain. The *bad success* of her, was Dundrum Bay. We were assured by a good machinist, who made the voyage across in her, and was on board when she was wrecked, that she made excellent time, and run sometimes at the rate of 15 knots per hour.

Discovery of Poison in a Body after Eight Years' Interment.

An inquest was held at Westbury, Wilts, (Eng.) on July 19th, ult., which resulted in a verdict of wilful murder against a woman named Rebecca Smith, for poisoning her infant child. An inquest was also held upon the bodies of nine other children, who all died in infancy, and the coroner's jury adjourned to wait further developements; and when they resumed the inquest (on the date above) Mr. Herapath, the chemist, gave the following important evidence, which we publish for its scientific value.

On the 12th inst., he says, a box was sent to my laboratory, which had three compartments. In one was a portion of soil tied up in a handkerchief. In the next I found the remains of a coffin exceedingly decomposed, labelled, "Sarah Smith, born July 18, 1841; died Aug. 7, 1841; aged 20 days." On removing the soil I found the remains of a very young infant. The texture of the body was entirely gone, and the bones were all separated. I subjected some of them to analysis, and found traces of arsenic, and also in the black mould from the interior of the skull; and then in that between the ribs, and nearer the region of the stomach, where it existed in a greater quantity. He then exhibited the arsenic, and said, This, I believe, is the first instance of arsenic being discovered after an interment of eight years; and I wish it to be circulated throughout the country that years have no effect in removing traces of arsenic. In the third compartment were the remains of Edward Smith, born June 14, 1844; died June 29, 1844; aged 15 days. In this case, after a lapse of five years and one month, arsenic was found in greater quantity under the ribs.

Coroner—Have you any doubt arsenic was given during life?

Mr. Herapath—I have never found arsenic in a body which was in a natural state; and I mention this to correct the ridiculous notions that have gone abroad, owing to some sayings attributed to the French chemists. Rapsail is reported to have said that he could produce arsenic from the legs of chairs, and Orfila that he could do so from the common soil. I have made experiments on hundreds of bodies of human beings and brutes, but never discovered arsenic unless it had been administered during life. I have also made experiments on soils, and I believe the statement of Orfila to be a mistaken one. My opinion is that arsenic was administered to these children during life, and that it was the cause of death; it existed in too great a quantity to have been given for a medical purpose.

The jury returned a verdict "That the deceased children died from the effects of arsenic, but how or by whom administered there is no evidence to show."

The Franklin Institute.

The Franklin Institute announces the Nineteenth Exhibition of American Manufactures to take place in October next, at the Museum Building. The rules which governed former exhibitions are substantially the same for this. Mechanics and others are invited from all quarters to send their contributions in time. The old Franklin still stands erect, with a noble and lofty bearing. We most heartily commend the Exhibition to our ingenious mechanics and artists.

A Mr. Daboll, of New London, Conn., has constructed an alarm air whistle, to be used in dense fogs for Light Houses and vessels at sea. It can be heard at a distance of four miles, and has been heard three times that distance.

New Volume.

We would call the attention of our old subscribers, and the public generally, to the new Prospectus published in this number, and remind them that the present is a favorable time to remit the amount of subscription for the New Volume. We hope our friends will aid us in extending the circulation of the Scientific American; and we re-assure them that no pains nor expense will be spared on our part to make it worth, to each subscriber, the full amount of a year's subscription.

Modesty in Giving Credit.

When a paper has unmannerly exchanges, it is right to request them to give credit for this or that piece of information which they may take from its columns. This excellent plan is adopted by the "Farmer and Mechanic," as a crowning piece to their list of patent claims. As our exchanges are a very honorable class, we never need to put them in mind of doing what is right. We believe, however, that it would be no more than an extension of the wise plan we have spoken of in our worthy contemporary, if it would call upon its exchanges, who may copy from its second page, to give "the Scientific American all due credit therefor."

Patents.

A number of friends who favored us with their business, will see their names on the Patent List of this week. The list of applications on file at the Patent Office, is still large. We hope to see it much reduced next year. Three months, at most, is long enough, from the time the application is made, until it is examined. The Cheese Press of Ira Carter, patented this week, is illustrated and described in No. 41, Vol. 3, Sci. Am.

Japan Lily.

The editor of the Trenton Gazette has seen a beautiful lily of a kind as yet unknown among us—the *lanci folium album*, discovered in Japan in 1831–33, by Von Siebold. The flower is pure white, eight to twelve inches in diameter, and crested with many peculiar projections also pure white, and resembling frost-work or snowy stalactities. The stock of this lily grows to the height of six feet, and when it is in perfection, presents a column of splendid white flowers.

The Longitude.

It being considered interesting and important to the commercial marine of the United States and of the United Kingdom of Great Britain, to ascertain with correctness the difference of longitude between the observatory at Cambridge, Boston and that at Liverpool, it is propesed by the United States' Government to accomplish this object by means of marine chronometers, to be transported across the Atlantic, to and from Boston, in the British and North American Royal Mail steamers; and for this to be effected, arrangements will be made with the authorities in England, that when the chronometers arrive at Liverpool on their return from Boston, they may be transmitted with all possible care and depatch to the Liverpool observatory.

Wheat Harvest.

The wheat harvest in western New York is over. It has been very abundant and has rewarded the labors of the husbandman. The number of acres sown last fall, was large, and the seasons have been remarkably favorable to the growth and ripening of the grain. The straw was very thick upon the ground, the heads are large and well filled, and the crop has almost entirely escaped injury from insects or rust. The berry is bright and plump, and the flour made from Genesee wheat this season will be unusually good.

Wheat Crop in Ohio.

It is generally believed that the wheat crop in Ohio the present year will be one-third less than usual. It is usually about 24,000,000 bushels. It will now be less than 18,000,000.

Florida Cotton Harvest.

The cotton crop in Middle Florida is very good this year. In some parts it is more than an average crop. This is cheering news from one quarter; but the very reverse news comes to us from Georgia and Alabama.

They fish for rats in Chicago the same as we do for *fish* here, only the objects are different.

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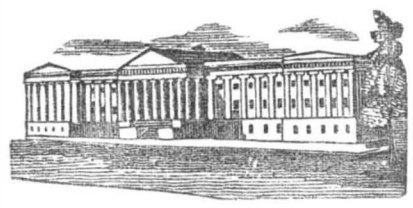

LIST OF PATENTS.

ISSUED FROM THE UNITED STATES PATENT OFFICE,

For the week ending August 14, 1849.

To Ira Carter, of Plattsburg, N. Y. for impovement in self-acting Cheese Presses. Patented August 14, 1849.

To Arthur Huston, of Bristol Me., for Dynamometer Log to indicate the velocity of vessels. Patented August 14, 1849.

To Benjamin M. Townsend, of Quincy, Ill., for improvement in Road Scrapers. Patented August 14, 1849.

To Charles Walker, of Brooklyn, N. Y., for improvement in Rice Hullers. Patented August 14, 1849.

To William S. Wilder, of Boston, Mass., for improvement in machines for Ruling Paper. Patented August 14, 1849.

To Edwin Hills, of Cincinnati, Ohio, for improvement in Steam Tables. Patented August 14, 1849.

To Samuell Pratt, of Cohasset, Mass., for method of uniting Metallic Plates to each other. Patented August 14, 1849.

To Daniel P. Bonnell, of Tecumseh, Mich., for improvement in the process of Flouring. Patented August 14, 1849.

To Horace Boardman, Plattsburg, N. Y., for improved arrangement of Steam Boiler and Furnace thereof. Patented August 14, 1849

To Edmund Blunt, of Brooklyn, N Y., for improved arrangement of Filters for Steam Boilers. Patented August 14, 1849.

To Wm. R. Hitchcock & Co., of Waterbury, Conn., Assignees of Peter Kirkham, of Birmingham, Eng., for improvement in Covered Buttons. Patented August 14, 1849.

ADDITIONAL IMPROVEMENT.

To Ely Ellicott & Samuel A. Abbot, of Philadelphia, Pa., for improved Lever Scale for Canals, Rail Roads, &c. Originally Patented February 6, 1849. Additional improvement annexed, August 14, 1849.

For the Scientific American.

Electricity as Known to the Ancients.

Antiquity obscures the real origin of most discoveries; and in conseqnence the glory has been attributed to different times and persons.

Facts dependant on the agency of electric influence seem to have been known in the very infancy of philosophy; and the first phenonemon is said to have been observed by Thales, of Militus, the first of the hellenic septad, as nothing earlier is on record than his observation, that amber when rubbed has the property of attracting light bodies. To him also Apuleius ascribes the discovery of the cause of thunder and lightning. (See Apuleius, Floridor. p. 361.) Theophrastus afterward noticed the attractive power of amber, and describes the tourmalin as possessing the same property; (v. Theophrast. Peri Lithon.) and remarks, on the authority of Diocles that "they attract not only straws and leaves, but also thin pieces of copper and iron." In the Geoponic Eclogues, (lib. xv. cap. i. amber is said to possess the more general faculty of attracting to itself all light bodies. Pliny, Solinus, and Priscian, make similar statements; and Aristotle, Oppian, and Claudius, were fully acquainted with the benumbing effects produced by the touch of the Torpedo. (v. Mem. Lit. et Philos. Soe. Manch. v. 3. p. 378; Origine des Deconvertes atribuces aux Modernes, par M. Dutens; Gent. Mag. July, 1785. p. 522; Gouzet's Origin of Laws, Arts, and Sciences, v. iii, B. iii, ch. ii, Art. iv.)

Amber is an inflammable vegeto-mineral, of a yellow color, vesino-vitrious texture, conchoidal fracture, glassey luster, is perfectly homogeneous, transparent to translucent, and negatively electric by friction. It is the *elektron* of the Greeks, *electrum* of the Latins, *anbarun* of the Arabians, *anbar* of the Persians, *anbara* of the Ethiopians, *ens* of the Hebrews, *bernstein* of the Germans, Danes, and Swedes, *amer* of the Belgians, *burstin* of the Poles, *gyanta* of the Austrians, *ambre* of the French, *ambar* of the Spaniards and Portuguese, and *ambro* of the Italians. Now, most, if not all, of these terms were given to amber on account of its attraction property. *Elektron* is derived from *elko*, which signifies to drag along, to make to follow, to draw up, to attract. The Heb anv has also the same signification. The phenomena of electricity were therefore known from the time when these terms were formed and applied to amber. The Heb. term above makes amber and its property known in the time of Ezekiel the Prophet. (v. Ezek i. 4.) The Greeks were acquainted with it several centuries before his time – (v. Hes. Sc. 142; Hat. 3. 115; Od. 4. 73; Soph. Ant. 1038.) The Gr. term is connected with *elektor*, the sun, to which Homer compares his amber, perhaps on account of its luminous appearance when excited.

Egypt, if not the birth-place, was the early protector of the sciences, and cherished every species of knowledge which was known or cultivated in remote times. It was the principal source from which the Grecians derived their information; and, after all its windings and enlargements, we may still trace the stream of our knowledge to the banks of the Nile.

The Egyptians had an inventive genius, and turned it to profitable speculations. Their Mercuries filled Egypt with wonderful inventions, and left it almost ignorant of nothing which could accomplish the mind, or procure ease and happiness. Here were the first libraries; and the titles they bore inspired the reader with an eager desire to enter them and dive into the secrets they contained. (Rollin. v. I. p. 186.) Here the Milisian Thales sojourned for some time, in the reign of Amasis, for the purpose of becoming initiated into the science of which the priests of Thebes and Memphis were the depositaries, and probably also visited Phoenicia, closely connected as it was with Chaldea, then another center of sacerdotal science. A. D. 642, Amru Benalas marched his troops into Egypt, and the city of Alexandria became a prey to the fury of the Saracens. Its fall was marked by the destruction of its celebrated library, which the Ptolemies had enriched with so many valuable works, gathering from all parts of the earth, and numbering 700,000.

Here was treasured the learning and wisdom of ages; but the rigid sentence of the second caliph, fanatical Omar I., was executed by his general with blind obedience, and six months were barely sufficient for the consumption of this precious fuel. Every scholar, with indignation, has since deplored the irreparable shipwreck of the learning, the arts, and the genius of antiquity, caused by this unfortunate event. Egypt was eminent in her time; she was celebrated for wisdom of old, and her philosophers attracted the wise and inquiring of other nations. Thales she initiated in the arcana of Nature; and who will doubt that by Saracenic fury was destroyed the facts and principles of the science of Electricity as gathered by the ancients. Every nation that enjoyed the means of commerce with the Mediterranean, derived pleasure as well as profit from the merchandise of India; and few situations were more convenient for commerce than Egypt. A spirit of enterprise her princes encouraged, and from the ports of the Red Sea, vessels launched out in pursuit of new countries and new commerce. Some moved along the coast of Africa, some entered the Persian Gulf; others penetrated to the mouths of the Indus, visited the coast of Malabar, and reached the Isle of Taprobane. Thither the Phœnicians had previously sailed, but concealed their discoveries with a mercantile jealousy. Under the prosperous reigns of David and Solomon, the Jews fitted out fleets which sailed to Tarshish and to Ophir, and returned with such cargoes as diffused wealth and splendor through the kingdom of Israel. As soon as the Romans acquired a taste for the luxuries of the East, the trade with India through Egypt was pushed with new vigor, and carried on to greater extent. In time, therefore, India became the chief emporium of Spices and aromatics, precious stones, pearls and silk, were the great articles of general importation.

There the human race began its career of improvement; and from the remains of sciences which were anciently cultivaled, as well as of arts which were anciently exercised in India, we may conclude it to be one of the first countries in which men made any considerable progress in that career. By the ancient heathen writers, the Indians were reckoned among those races of men which they denominated *Autochtones;* and the inhabitants trace back the history of their country through an immense succession of ages, and assert that all Asia formed one mighty empire. Many facts have been transmitted to us which clearly demonstrate that the natives of India were not only more early civilized, but had made greater progress in civilization than any other people. People contiguous to, and nations remote from India, seem to have been acquainted, from time immemorial, with its commodities, and valued them highly. (Gen. xxxvii. 25.) By every person who has visited India in ancient or modern times, its inhabitants, either in transactions of private business or conduct of political affairs, have been deemed not inferior to the people of any nation in sagacity or acuteness of understanding. From the application of such talents to the cultivation of science, an extraordinary degree of proficiency might have been expected. The Indians, accordingly, were early celebrated on that account, and some of the most eminent Greek philosophers travelled into India, that by conversing with the sages of that country, they might acquire some portion of the knowledge for which they were distinguished. By the inspired writers, the wisdom of the East was early celebrated, and great was the eagerness of all nations to obtain the productions of their ingenious industry. The electric fluid, which became apparent on the friction of their amber, could not have escaped their investigation. On account of its beautiful yellow color, its great transparency, and the fine polish it receives, amber was anciently considered the most precious of jewels, and was cut, as it is now, into articles of ornament and dress. The polishing is done by friction, by which it becomes very hot and highly electric. The artists are often seized with nervous tremors in their wrists and arms from the electricity. Hence, the workmen keep the piece but a short time on the wheel, and by alternating with a number of pieces, keep each of them cool and feebly excited. The strong electric virtue and attractive power which the amber acquired in being worked, must have induced the ancient Indians to try other experiments, from which they gathered principles and facts. In the island of Ceylon, where it is very common, tourmalin is known among the natives by the name of *tournamal;* and the Dutch, who first became acquainted with it in this island, gave it the appellation of *Aschentrikker*, from its property of attracting ashes when thrown into the fire. These facts and their discoveries were probably recorded in the Alexandrian Library, and lost during the period of conquest and the long night of ages. The electric fluid is coeval with the world; its presence pervades every substance; and its operations can hardly fail to show themselves wherever bodies are concerned. There is therefore unequivocal evidence, that many discoveries and improvements in electricity were made by the ancients many centuries before the Christian Era; that the subtle agent became an important branch of primitive science, and that much more was known by the ancients than we are willing to allow them, of those shining truths which are the peculiar boast of modern ages.

J. W. O.

Scientific Men of France.

Le Verrier, the astronomer, is a member of the assembly in France. In the first organization of the bureaux, Arago, in one, was elected chairman, and Le Verrier, Secretary. No two men dislike each other more, or disagree less in politics. The secretary has spoken in his bureau, and exceedingly well, against the propositions of amnesty for the insurgents of June, 1849, and the removal of martial law.

Meterological Knowledge.

Mr. E. Merriam, of Brooklyn, in a letter to a correspondent of our excellent exchange, the "Sentinel of Freedom," (Newark. N. J.), makes use of the following singular language:—

"I have been surprised at the remarks made by men of scientific acquirement in relation to *lightning*, and their apparent limited knowledge of its extensive influence. The thunder storms which have occurred the last three months within the field of my researches equal one to every forty hours.

Thunder and lightning have been favored agents of the Supreme Ruler of the Universe. At Sodom and Gomorrah we have no record of their being present at the destruction of the cities of the plain, and it does not become us to be wise above that which is written, by asserting that they were; but of the memorable transactions of Sinai, the sacred historian makes particular mention of the "thunderings and lightnings," and at a period a little prior to that great event, the writer of the book of Job, whose pen was guided by a hand obedient to a mind enlightened by the source of all knowledge, makes particular mention of the lightning of the thunders for which infinite goodness had made a way.

Previous to the publication of the remarks by Prof. Olmsted upon Electricity and Cholera, I forwarded to him a transcript of my lightning record, and also a memorandum in print suggesting that *no* case of destruction of human life by lightning had ever occurred where the person was engaged in supplicating the Throne of Grace, and none to persons who had reared a metallic lightning rod for the purpose of protection.

I have also published a suggestion that showers of falling stars, meteorites and Aurora Borealis, are the offsprings of earthquakes, which I think I show to be the case by a multitude of facts. Our earth has not been left by Him who made it and pronounced it to be "good," to take care of itself, but the same creative power that put it in motion still governs all its movements, even the minutest. * * * * It is the record of facts we want, to enable us to learn correctly what pertains to natural phenomena. The humble searcher after truth as it is in nature, has, continually opening before him, a wider and a still wider field for cultivation, and the results of his labors are according to the measure of his efforts and his confidence in the power which has in its keeping the great treasury of knowledge."

[The above must be taken with all due allowance, as being *suggestions* only, though very strange ones; concerning which we must say, "the most immoderate flight that ever poet took, when warm with wine, was moderate, conjecturing."]

Tea Drinking amongst the Kalmucs.

The Kalmucs are distinguished at once for great powers of enduring hunger and thirst, and for a verocity that must be seen to be understood. Their original diet consists chiefly of tea. The prepare this beverage by boiling the brick tea, sometimes adding to it a lump of mutton fat, at other times a little roasted barley, or a handful of salt in a cauldron, whose various uses do not seem calculated to increase the relish of the compound, and filling it out into wooden cups, drink it almost boiling hot. A small portion of tobacco, smoked from a copper pipe, completes the frugal repast. Their chief animal food is mutton, of which they consume immense quantities whenever they can procure it sheep, cows, deer, horses, whether they have died a natural or violent death, are eaten alike, and require but little cooking.

Important to Travellers by Sea.

An experiment was recently tried at sea to render the insipid water taken from the casks cool and refreshing, which proved entirely successful. A wine bottle was procured, which being filled from the casks and corked tightly, was lowered into thirty or forty fathoms of water by means of a lead. Upon being returned after five or seven minutes' interval, the temperature of its contents was found to be considerably reduced; in common parlance, it was almost as cold as ice water.

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TO CORRESPONDENTS.

"M. P., of Pa."—The Rule for finding the weight of a fly wheel is, to multiply the horse power of the engine by 2000, and divide by the square of the velocity of the circumfe rence of the wheel. You can easily calculate from this, but do not suppose that there is any power gained by a fly wheel—its object and office is different from this.

"G. A. S. of N. Y."—The fault is not in the Patent office, no doubt full justice was done to your claims. The great trouble was the lack of novelty in your invention, and you should have taken the advice in the matter as being correct.

"J. W. C. of Ind"—Your communication has been received, and will receive early attention.

"A. J. P. of La."—It will not be possible for us to give you the advice sought for, without a better opportunity of examining into the matter. You will readily see the necessity of sending a clear drawing or model, together with a description of the invention. You are not the first inventor of machines for the purpose set forth.

"N. M. of Pa."—We know of no pump in use, superior to Mr. Kase's, for forcing water.

"T. W. L. of Mass."—The ideas you have advanced in your letter are correct, and have been illustrated in this paper, frequently during the present volume.

Your experiment can do you no harm, if a knowledge of the laws of electricity be desirable and practical information better than theoretical.

"J. B. L. of Va."—We know of no mill such as you describe and should think it might be patentable Patents are granted for the United States, only.

"M. K. of N. Y."—We cannot give you the informati on you desire, and would advise you to write Mr. Prosser who will undoubtedly, impart the necessary information cheerfully.

"G W. of Miss."—We have examined the sketch of your lathe, and should think that it was new and patentable, and would advise you to send us a model without delay. We do not attend to the manufacture of models—all other business connected with the getting out of patents will be most promptly attended to by us.

"L. D. B. of Pa."—We do not consider your devise, the subject of a patent, as it is already in use, in mill wheels, &c.

"O. C. of Ill."—Your model has been received and we can discover no patentable combination about it, in fact there is no combination whatever,—it will be necessary for you to construct a working model illustrating fully, the principles upon which you wish to found your claims.

"Wm. F. & G. A. G. of Pa.—We think that your invention is new, from what little insight we can get of its general arrangement, from your sketch of it, a model would be necessary, before we could give a decisive opinion upon its novelty.

"T. J. W. of Conn."—Borax has long been known as a solvent of shell lac and copal. You will be fully convinced of this, by reading any good work on chemistry.

"H. W. R., of New York."—We cannot lay our hands on the piece of information you want, although we have made considerable search for it; if we discover it you will see it published.

"O. H. P. W., of Ala."—We can only say this about Rich's wheel, that a gentleman who has had one in operation for two years, tells us that it is "a most excellent wheel." Mr. Rich lives in Oswego Co., N. Y. The other information we will try and get for you soon.

"G. W., of Boston."—Your model is at hand, and has been examined. We can discover no combination sufficiently new to warrant an application for Letters patent.

"R. F., of N. Y."—You are mistaken in a great measure: the author of the article you refer to, is both practical and scientific and makes engines.

"B. F. S., of Ohio."—Yours has just come to hand.

"H. W. G., of N. C."—Your communication has been received. We shall endeavor to furnish the information sought for as early as possible.

"A. T., of N. Y."—John Johnson is a swindling impostor, and deserves an uncomfortable lodge in Auburn, where he justly belongs, and should never be allowed a peep outside of its walls, unless properly secured by manacles, or deprived of what little sense he possesses. Any biped in human form that will be engaged in the contemptible business of swindling newspaper publishers, or the public, out of the paltry price of a year's subscription, deserves to be transported in chains to that newly discovered country near the Red Sea, and be compelled to gather the poison from the "Upas." Travelling agents shall meet with a cold reception from us. We have none, and what is more we don't want any.

"J. A. R., of N. Y.; J. F. M., of Pa., and C. C. of N. H."—Your papers have been forwarded to the Patent Office.

Money received on account of Patent Office business since August 15:—

R. & W., of Ct., $30; L. & B., of N. J., $30; J. F M., of Phila., $20; R. A., of Mo., $40.

Making Varnish.

A New York correspondent writes to us and says "in the receipt for making varnish No 47 Scientific American, if the bottle containing the ingredients be placed in hot water the gum will dissolve about as fast, as if placed on the fire, and then there is no danger of the spirits taking fire." This is correct.

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Southport, Wis.	Henry M Hugunin
Saco, Me.,	Isaac Crooker.
Savannah, Geo	John Caruthers
Syracuse, N. Y.	W. L. Palmer.
Taunton, Mass.,	W. P. Seaver.
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To Manufacturers or Capitalists about to commence the Manufacture of Cottons.

THE subscriber, brought up with Messrs. Samuel & Jno. Slater, at operating and building cotton machinery, and for the last 20 years has travelled through several of the United States, setting up and building, on the most approved plans of modern invention, now offers his services as Superintendent and is ready to introduce a new system, greatly reducing the cost of manufacture, and at the same time making better goods than ever was in the market. Please direct, post paid, to

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THESE celebrated Suction and Force Pumps, are for sale at $25 each, by
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Patent Agency.

☞ From our long acquaintance and experience in Patent Office business we have no hesitancy in asserting that we are better able to judge the merits of new inventions, and are better capable of advising upon all subjects pertaining to Patents than any other concern in the United States.

Any business connected with the Patent office may be done by letter through the Scientific American office with the same facility and certainty as though the inventor applied in person. Our prices too (another important consideration to inventors) are but about half as much as the charges of most agents as the amount of business which we do, and that in connection with the publication of the Scientific American renders to us superior advantage over all other agents.

Having been often complimented by those who have entrusted their business in our care, we here repeat what very many have said. "The best Patent Agency in the United States is at the Scientific American office"

All models, drawings or communications that are sent to the Scientific American office for inspection are deposited from the eyes of the public until the necessary application for securing the invention has been made.

The best of artists are constantly employed to make drawings from models and our corps of specification writers are composed of gentlemen formerly connected with the Patent office at Washington as Examiners.

All communications should be addressed to
MUNN & CO. Scientific American Office.
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MECHANICS' FAIR.

THE Salem Charitable Mechanic Association announces to the public, that their first Exhibition will be held at Mechanic Hall, in the city of Salem, commencing on Monday, September 24th, and continuing through the week.

We invite all to contribute in every department of industry which can in any way promote the comfort, convenience or improvement of mankind. We respectfully solicit the aid of Mechanics, Manufacturers, and Artists. Let them bring forward the products of the Loom and the Forge All kinds of Machinery; every description of Tool and Implement. Articles of Wood, Stone, Metal, Glass, Leather, Wool, Cotton, Silk, Hemp and Flax, specimens of Printing, Statuary, Painting, Daguerreotypes, Engraving and Lithography. Articles of female ingenuity and taste will have a prominent place in the Exhibition.

The Annual Exhibition of the Essex Agricultural Society, and the Essex Institute, will take place in Salem during the week of our Fair We trust that the Manufacturers of Agricultural Implements will bear this in mind, that we may have a good display of articles in this department. The Superintendent of the Fair will be entrusted with the care and management of every article sent for exhibition, and every facility will be given to show its useful purpose, its ingenious contrivance. Care will be taken to preserve them from injury; trustworthy men, will be in attendance day and night; but all articles will be at the risk of the owners. Each contributor will be entitled to admission. Contributors are particularly and earnestly requested to send forward their goods in season Articles intended for exhibition, will be received from the 1st to the 22d Sept. A check will be given for each article received, which must be presented when they are returned.

All Goods, Machinery, etc., intended for exhibition will be transported over the Railroads leading into the city, free of expense.

Medals of silver, and Diplomas, will be awarded according to the merit of the articles exhibited.—Strict justice shall be adjudged to every contributor. Impartial men, possessing intelligence, and competent knowledge in each department of art, will be selected as judges; those only will be appointed who are not competitors for premiums.

☞ All communications in relation to the Fair, should be addressed (post paid,) to the Secretary of the Association.

ALBERT G. BROWNE, President.
jy28 ELEAZER M. DALTON, Secretary.

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☞ We have constantly on hand and for sale:

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Scribner's Mechanics,	$1,50
Ewbank,s Hydraulics and Mechanics	$2,50
Morfitt's Chemical Manipulations.	$2,50
Ranlett's Architecture in numbers, each	50
Arnott's Gothic Architecture " "	25
Camera Lucidas.	$6,00

j14 MUNN & CO.

STEAM BOILER EXPLOSIONS

THE subscriber having been appointed sole agent for Faber's Magnetic Water Guage, is now ready to supply the trade and individuals with this celebrated Instrument. Besides the great safety from explosions, resulting from its use, it is a thorough check against careless stoking and feeding. In marine engines it will regulate the exact quantity required in the "blow-off" Pamphlets containing full information can be had free on application to the Agent, JOSEPH P. PIRSSON,
j14 tf Civil Engineer, 5 Wall st. New York.

S. C. HILLS, No. 43 Fulton st., has constantly for sale—

Steam Engine 3 to 20 horse power, at from $200 to $1250—good horizontal engines—deliverable here or in Philadelphia.

Steam Boilers for the same, say Bentley's patent, or common cylinder, at lowest prices.

Engine Lathes 5 feet $170: 7 feet $180; 10 feet $200 each, with gear for cutting screws, $45 additional.

Iron Planing Machines, to work by hand $100.—Also Hand Lathes, Drills. &c.

The above Machinery will be warranted. Letters must be post paid. a11 8t

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PATENTS procured in Great Britain and her colonies, also France, Belgium, Holland, &c. &c., with certainty and dispatch through special and responsible agents established, by, and connected only with this establishment. Pamphlets containing a synopsis of Foreign Patent Laws, and information can be had gratis on application.

JOSEPH P. PIRSSON, Civil Engineer,
j14 tf Offices 5 Wall st. New York.

NOTICE.

☞ The Second Exhibition of the Maryland Institute for the Mechanic Arts, will be held at Washington Hall, in the City of Baltimore, from Thursday, 27th of September. to 13th October, inclusive. Machines, models, or goods sent to the address of H. Hazelhurst, Corresponding secretary of the Institute, (expense paid) will be met with immediate attention, and every facility used to exhibit the same to the best advantage. j16 4m

MORSE'S PATENT AIR DISTRIBUTOR.

THIS improvement is a substitute for the common Grate. by which Tan, Sawdus or a like material will burn as freely as dry wood. It has been introduced in most of the Northern States into Steam Saw Mills and Tanneries with the most gratifying results. We are now prepared to furnish castings at reasonable prices at New York or Philadelphia A model may be seen at the office of J. P. Morris & Co. Steam Engine Builders, Philadelphia, who are prepared to furnish castings at short notice.

Persons wishing to purchase territorial rights will address L. MORSE & BROTHERS. Patentees,
j14 6t* Athol, Mass.

Agents will take notice that the right for the states of New York, Pennsylvania, Maryland & Delaware have been sold L. M. & BROS.
Athol, July 3, 1849.

SUPERIOR TURNING LATHES.

JAMES STEWART, 15 Canal-st. and 106 Elm-st. is constantly manufacturing and has now on hand between 50 and 60 superior lathes of the following descriptions and at reasonable prices. namely:
Dentist's Lathes, very highly finished.
" " common,
Brass and Wood Turner's Lathes.
Jeweller's and Pencil-case maker's very superior.
J. STEWART is also authorized to act as agent for the sale of the celebrated Lathes manufactured by James T. Perkins of Hudson, of large size and at prices from $250 to $800. A specimen of this description may be seen at his factory as above.
j27 tf

BRITISH PATENTS.

MESSRS. ROBERTSON AND CO..

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(Of which Firm Mr. J. C. Robertson, the Editor of the Mechanics Magazine from its commencement in 1833, is principal partner,) undertake

The Procuration of Patents.

For England, Scotland, Ireland, and all other European Countries, and the transaction, generally all business relating to patents.

Instructions to Inventors can be had gratis, on applying to Mr. THOMAS PROSSER, 28 Platt Street New York; as also the necessary forms of Petition and Declaration for British Patents.

PATENT OFFICE
ml tf 166 Fleet Street, London.

Z. C. Robbins,

Consulting Engineer and Counsellor for Patentees.

Office on F street, opposite Patent Office, Washington, D.C. j20 tf

Johnson's Improved Shingle Machine.

THE Subscriber having received Letters Patent for an improvement in the Shingle Machine, is now ready to furnish them at short notice, and he would request all those who want a good machine for sawing shingles, to call on him and examine the improvements he has made, as one eighth more shingles can be sawed in the same given time than by any other machine now in use. Manufactured at Augusta, Me. and Albany, N. Y. J. G. JOHNSON.
Augusta, Maine, Oct. 28. 1848. o23 1y

☞ Messrs Norcross & Co. No. 60 Nassau st. New York, are Agents for the sale of my Shingle Machines.

TO PAINTERS, &c.

QUARTERMAN'S Improved American Atomic Drier, adapted to all kinds of Paints and Painters' colors. Sold wholesale and retail, at 114 John st New York.
m19 3m* QUARTERMAN & SON.

Barlow & Payne,

Patent Agents and Consulting Engineers.

89 Chancery Lane, London.
m12 tf Patent Journal Office.

Lap welded Wrought Iron Tubes

FOR TUBULAR BOILERS,

From 1 1-2 to 8 inches diameter.

THESE are the only Tubes of the same quality and manufacture as those so extensively used in England, Scotland, France and Germany, for Locomotive, Marine and other Steam Engine Boilers. THOMAS PROSSER, Patentee,
m1 28 Platt street, New York.

TO INVENTORS.

THE Subscriber begs leave to inform inventors and others that he manufactures working models of machinery &c. in a neat workmanlike manner. Patterns of every description made for Castings.—Scroll Sawing neatly executed. Mathematical and Nautical Instrument Cases of every description.
JOSEPH PECKOVER, 240 Water st. N. Y.
j30 3m* Between Beekman st. and Peck Slip.

MARDEN'S IMPROVED BALANCE CURTAIN FIXTURES.—Patented Oct. 1848.

FOR Sale wholesale, by J. A. D. Worcester, No. 43 Main st., near the City Square, and by the subscriber, GEORGE H MARDEN
j9 3m* Charlestown Mass.

PATENT AGENCY.

SAMUEL C. HILLS, No. 43 Fulton street, N. Y Patent Agent and Agent for the sale of Patent Goods and Patent Rights—still continues to aid and assist inventors in procuring Patents and selling Rights. Charges moderate. Application per mail must be post paid. m26 tf

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FAY & GULICK,

Designers and Engravers on Wood, No. 80 Nassau street, Room No. 24. m12 tf

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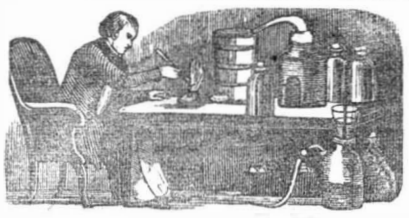


Hydrogen Gas.—No. 2.

In our last, it was stated that water was a compound of hydrogen and oxygen. To form water from these two elements it is not sufficient to raise the gases; for the mixed gases might be kept for any length of time without any union taking place between them; but if two volumes or measure of hydrogen be mixed with one volume or measure of oxygen, and then a light from any flaming body be applied to the gases, &c., mixed, an explosion immediately takes place—the gases combine, and water or steam is the result of this combination. The explosion in this case is very violent; and great caution should be observed in performing this experiment. The gases should be mixed only in small quantities at a time, and the containing vessel should be of sufficient strength to resist the force of the explosion.

Pure water, when required, is obtained by distillation from impure river or well water. For this purpose the water is put into a large still, and maintained at a boiling heat; the steam that passes off first generally contains a small quantity of ammonia—this is allowed to escape for a few minutes—the steam is then caused to pass through a long length of metallic pipe surrounded with cold water, which condenses it; it will then be in a state of purity sufficient for most purposes, but not be absolutely pure. Filtering water does not render it pure; it merely separates from the water those insoluble matters *floating* in it—the water still retaining all the matters that were *dissolved* in it before being filtered. Water dissolves, not only solid substances, but also matters in a gaseous state; 100 cubic inches of water at 60° Fah, when the barometer stands at 30 inches, will absorb of

Sulphurated Hydrogen	100	cubic inches.
Carbonic Acid	100	"
Nitrous Oxide Gas	80	"
Olefient Gas	13	"
Oxygen	4	"
Carbonic Oxide	2	"
Nitrogen	1½	"
Hydrogen	1	"

These gaseous substances are all expelled by boiling the water; but the solid substances dissolved in the water are gradually precipitated or deposited, as the water is evaporated—because the water can only dissolve a certain quantity of each solid substance contained in it; when, therefore, a portion of the water has been evaporated, the portion of solid matter, previously held in solution by the portion evaporated, cannot be taken up or dissolved by the water remaining in the vessel that is already saturated; it therefore remains as a solid deposit, which is generally denominated *fur*. Sometimes this deposition of solid matter is observed to take place before scarcely any of the water has evaporated, indeed before the water boils; this is particularly the case with water containing carbonate of lime, and depends upon the fact, that carbonate of lime (chalk) is not soluble in water, but is soluble in carbonic acid, while in solution in water; when the carbonic acid is expelled by heat, the carbonate falls as an insoluble powder, as there is no longer present any substance that has the power of dissolving it To render these deposits soluble in a small quantity of water is an object of great importance to engineers, and has been the subject of several patents.

Silver Fire.

Place a piece of burning charcoal, a morsel of dried chrystals of nitrate of silver, (not the lunar caustic,) and it will immediately throw out the most beautiful sparks that can be imagined, while the surface of the charcoal will be coated with silver.

There will be a total eclipse of the sun on the 17th prox., and an eclipse of the moon on the 2nd Sept., both visible in the United States.

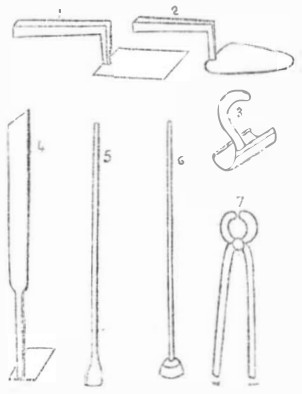
Iron Moulding.

Continued from page 384.

MATERIALS USED.

The *principal* materials used in our moulding, are sand of various kinds, clay and charcoal dust. Sand is superior to all other substances as a material for forming moulds generally. Hot iron has no chemical action upon it, although it has upon the coal dust. Sand is a fine medium to conduct the air which is expelled from the space in the mould filled with the molten iron, and also for the other gases, generated by the heated iron coming in contact with the coal dust. It also possesses considerable adhesiveness when pressed together to make it retain its form against the pressure of the molten metal, and it conforms itself very accurately to the surface of the pattern imbedded in it. For long cores, the more free the sand is, so much the better, if it has adhesiveness but as it wants this, it must be tempered with clay, yeast, molasses, or meal made from ground peas. Clay mixed with sand is used for what is termed loam moulding. They are mixed at the rate of nine parts of sand to one of clay, ground together with a little water. This, with a handful of hair and a little saw dust added, forms core loam. Loam moulding is executed without the common patterns. There are various kinds of sand use for moulding. Free argilicious sand, ground along with one twelfth part of the best bituminous coal, makes a good sand for common purposes. The use of dry sand core is to allow the air to escape freely from the inside of the casting, and also to have a core that will not crush with the weight of metal.

Were the melted iron allowed to come in free contact with sand of the mould, it would enter its minutest interstices, and thus produce a rough surface. To avoid this, ground charcoal dust (some say oak is best,) is dusted over the surface of the mould and pressed and smoothed down. The way by which it protects the sand is by its inflammability. If liquid iron is poured on a smooth surface of wood, it rolls about like mercury. This is caused by the gases arising from the combustion of the wood, raising the iron off the surface. The use of the coal dust that is ground along with the same, is for the purpose of keeping the metal from running into the sand pores, when the metal is too powerful for the dusting powder. Many moulders do not know the philosophical use of the black dust.



The accompanying engraving represents different kinds of tools used by moulders for their work; No. 1 is the trowel,—it is much used, and is made of different sizes, from less than half an inch to two inches broad and three inches long. It is used to smooth the surface of the sand, to press down and polish the blackening and repair injured parts of the moulding, &c. No. 2 is another trowel for entering angles of the moulding. No. 3 is used for hollow impressions in the sand. No. 4 is the cleaner for smoothing sunk surfaces in the sand below the reach of the trowel—the lower end goes to the bottom, to take up loose sand, and also to smooth down the surface; the upper end smooths the sides. No. 5 is the first rammer. It is about four feet and a half long. No. 6 is the second rammer for finishing the work commenced by the first. It has a round face, and is about three and a half inches in diameter. No. 7 is a pair of pincers, for grasping and shifting the castings. Shovels are used for working the sand, and serve for sifting it. There are also bellows used to blow loose sand off moulds; pots for holding the packing sand, and the water used in the moulding; swabs for applying the water to the mouldings; and there are bags to hold the black dust to be shaken on the sand; piercers made of thick iron wire, sharpened at one end to a point, are used for piercing the same to let out the air.

(*To be continued.*)

Galvinizing Iron.

If iron plates are well scoured, they can be covered with zinc, by depositing it upon them by means of a galvanic battery. It is done upon the principle of the electrotype. A solution of the chloride of zinc and borax is used, in which to place the plates connected with the wires of the battery, when the zinc will be precipitated on and in union with the iron. A very weak current of electricity is used; zinc, dissolved in hydrochloric acid and ammonia, makes an excellent solution for the purpose. The more simple way, however, is the old plan:—Scour the plates well and dip them into molten zinc, into which is thrown some sal ammoniac. The best way to keep the zinc in the right state, is to have the zinc bath placed in a bath of molten lead. This latter plan has been allowed to be more troublesome in one sense, and not in another, viz., less trouble in the evaporization of the zinc.

Scientific Meeting.

The American Association for the advancement of Science, commenced its second annual meeting, at Harvard Hall, Cambridge, (Mass.) on Tuesday of last week. Professor Henry was elected President for the current year.

The first paper read, was from Professor Secchi, of Georgetown, relative to the causes of the Aurora Borealis. He propounded a theory based upon the powers of moist air as a conductor of Electricity, and gave much interesting information on the subject.

Dr. Hare, of Phila., differed entirely in opinion, and mentioned experiments, instituted by himself, which proved the position he took. Professor Henry also made some observations, in the course of which he said.

The Smithsonian Institute, in connnection with an extended system of meteorology which it has undertaken to establish, has issued directions for observations of the Aurora. These directions are similar to a set issued by the directors of the observatory at Toronto for observers in Canada. The observations made in the two countries will thus form one extended system. The proprietors of the several telegraph lines have offered to grant us the use of their wires for meteorological purposes, and it is hoped when the lines are completed, and we have established a set of observers extending, for example, from Toronto to Washington, or even farther south, we shall be able to study the phenomenon of the Aurora with more precision than it has ever been studied. On a long line extending north and south, the observer for example, at Toronto, having noticed an Aurora may call the attention to it of all the observers along the line and thus the extent of the visibility, and the simultaneous appearance of any peculiar phase of the meteor, may be readily determined.

Shrinking of Flannel.

Enclose new flannel in a bag; put it into a boiler with cold water, heat and boil it. It will never shrink any more after this operation, and should then be made up into garments.—*Ex.*

[It will shrink though. Just take and rub it, or pound it among some strong soap suds and you will find out.

LITERARY NOTICES.

To say we are glad to welcome upon our table Peterson's National Magazine, would be but a reiteration of what we have said on several previous occasions. We never look in vain for good reading in this Magazine, and we seldom lay it by until we come to that portion which is devoted to the ladies' dressing arrangements. We avoid this portion from our peculiar attachment to Bachelorship. We dare say, however, that Peterson understands their wants in this respect, and with the united aid of Mrs. Stephens, the accomplished Editress, we dare not presume to question their value to the ladies. The engravings are good, the matter equally so. We would remind the ladies that a capital treat is lost by not reading "The Palaces and Prisons." Published in Philadelphia.

Godey's Lady's Book for September, has been received through the politeness of H Long & Bro 43 Ann St. this city. It contains 13 original engravings and 24 extra pages of fine letter press. This number is superb and notwithstanding the publisher has been working as he says, with the thermometer at 99. degrees and upwards, he has really succeeded in producing a highly creditable number, and not inferior to any previous, this is saying considerable, although nothing but truth. The mezzotint of 'Contentment better than Wealth' is finely done, so is also the "The view on the Hudson" and the colored plate of "Paris fashions Americanized." The number throughout is varied and interesting.

It is with pleasure we acknowledge the receipt of the Sept. No. of Sartain's Union Magazine, of Literature and Art, and it is truly what its title indicates. We are indebted to Messrs. Dewitt and Davenport of the Tribune Buildings in this city, for the monthly receipt of this valuable work. The present No. contains four beautiful engravings, besides a number of plates illustrative of the latest fashions for Autumn, and we are confident that its pages will be found highly interesting and instructive, by its fair readers. The leading picture in this No. Christ weeping over Jerusalem, is executed by Mr. J. Sartain who is not excelled probably by any one in this art. The scene represented is very impressive.

NEW PROSPECTUS

OF THE

SCIENTIFIC AMERICAN!

TO INVENTORS, MECHANICS AND ARTIZANS.

The Publishers of the SCIENTIFIC AMERICAN in returning their thanks to the community for the liberal support and encouragement which has been extended to them during the past four years, would respectfully give notice that the 1st number of Volumn 5, will be issued on the 22d of September, affording a favorable opportunity for all to subscribe, who may wish to avail themselves of the valuable information always found in its columns. The new volume will be commenced with new type, printed on extra fine paper, manufactured expressly for this publication, and embelished with a chaste and elegant border. It will be published as heretofore in quarto form, thus affording, at the end of the year, a BEAUTIFUL BOOK of OVER 400 PAGES, containing between 5 and 600 ORIGINAL ENGRAVINGS of NEW INVENTIONS, described by letters of reference, besides a great amount of reading matter, valuable to every man in the country,

An increased amount of care and expense will be bestowed upon this Volume, to render it more fully what it has been termed, "The best Mechanical Paper in the World." Its columns, as usual, will be filled with the most reliable and correct information in regard to the progress of SCIENTIFIC and MECHANICAL Improvements, CHEMISTRY, ARCHITECTURE, BOTANY, MANUFACTURES, RAIL ROAD Intelligence, and the WEEKLY LIST OF PATENTS, prepared expressly for this Journal at the Patent Office, Washington.

As an evidence of the estimation in which this publication is held by the Scientific and Mechanical portion of the community, it is only only necessary to state, that its circulation has increased within the last three years to upwards of 10,000 copies, already exceeding the united circulation of all the Mechanical and Scientific publications in this country, and the largest of any single one in the world.

The information obtained from the Scientific American can always be relied upon as being correct: and we shall, as usual, aim to elevate the interests of our industrious mechanics, and also to assist them in their labors, by sound advice and practical instruction.

TERMS:—Two dollars a year in advance; or, if desired, one dollar in advance, and the remainder in six months.

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10 copies for	6 months		$8
10 "	12 "		$15
15 "	12 "		$22
20 "	12 "		$28

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N. B—Subscribers will bear in mind that we employ no Agents to travel on our account; a list of our local agents will be found in another column—all of whom are duly authorized to act as such, and none other.

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